

Officers and Council.

Elected March 17, 1921.

PRESIDENT.

SIR JAMES WALKER, D.Sc., LL.D., F.R.S.

VICE-PRESIDENTS.

WHO HAVE FILLED THE OFFICE OF PRESIDENT.

H. E. ARMSTRONG, Ph.D., LL.D., F.R.S.	SIR WILLIAM J. POPE, K.B.E., M.A., D.Sc., F.R.S.
SIR JAMES J. DOBBIE, M.A., D.Sc., F.R.S.	ALEXANDER SCOTT, M.A., D.Sc., F.R.S.
WILLIAM H. PERKIN, Sc.D., LL.D., F.R.S.	SIR WILLIAM A. TILDEN, D.Sc., F.R.S.

VICE-PRESIDENTS.

J. B. COHEN, Ph.D., B.Sc., F.R.S.	F. S. KIPPING, D.Sc., Ph.D., F.R.S.
H. J. H. FENTON, M.A., Sc.D., F.R.S.	S. SMILES, O.B.E., D.Sc., F.R.S.
F. G. HOPKINS, M.A., D.Sc., F.R.S.	J. F. THORPE, C.B.E., D.Sc., Ph.D. F.R.S.

TREASURER.

M. O. FORSTER, D.Sc., Ph.D., F.R.S.

SECRETARIES.

J. C. PHILIP, O.B.E., M.A., D.Sc., Ph.D., F.R.S.	J. I. O. MASSON, M.B.E., D.Sc.
---	--------------------------------

FOREIGN SECRETARY.

ARTHUR W. CROSSLEY, C.M.G., C.B.E., D.Sc., LL.D., F.R.S.

ORDINARY MEMBERS OF COUNCIL.

A. J. ALLMAND, M.C., D.Sc.	C. A. KEANE, D.Sc., Ph.D.
E. F. ARMSTRONG, D.Sc., Ph.D., F.R.S.	T. S. PATTERSON, D.Sc., Ph.D.
J. S. S. BRAME.	T. SLATER PRICE, O.B.E., D.Sc., Ph.D.
F. H. CARR, C.B.E.	W. RINTOUL, O.B.E.
C. H. DESCH, D.Sc., Ph.D.	SIR ROBERT ROBERTSON, K.B.E., M.A., D.Sc., F.R.S.
E. V. EVANS, O.B.E.	R. ROBINSON, D.Sc., F.R.S.
F. E. FRANCIS, D.Sc., Ph.D.	N. V. SIDGWICK, M.A., Sc.D.
J. A. GARDNER, M.A.	J. M. THOMSON, LL.D., F.R.S.
H. B. HARTLEY, M.C., C.B.E., M.A.	
J. C. IRVINE, C.B.E., D.Sc., Ph.D., F.R.S.	

ASSISTANT SECRETARY.

S. E. CARR.

LIBRARIAN.

F. W. CLIFFORD.

JOURNAL
OF
THE CHEMICAL SOCIETY.

TRANSACTIONS.

Committee of Publication:

A. J. ALLMAND, M.C., D.Sc.	T. M. LOWRY, C.B.E., D.Sc., F.R.S.
O. L. BRADY, D.Sc.	J. I. O. MASSON, M.B.E., D.Sc.
A. W. CROSSLEY, C.M.G., C.B.E., D.Sc., F.R.S.	G. T. MORGAN, O.B.E., D.Sc., F.R.S.
C. H. DESCH, D.Sc., Ph.D.	T. S. PATTERSON, D.Sc., Ph.D.
M. O. FORSTER, D.Sc., Ph.D., F.R.S.	J. C. PHILIP, O.B.E., D.Sc., Ph.D., F.R.S.
J. T. HEWITT, M.A., D.Sc., Ph.D., F.R.S.	N. V. SIDGWICK, M.A., Sc.D.
J. C. IRVINE, C.B.E., D.Sc., F.R.S.	J. F. THORPE, C.B.E., D.Sc., F.R.S.
C. A. KEANE, D.Sc., Ph.D.	SIR JAMES WALKER, D.Sc., LL.D., F.R.S.

Editors:

J. C. CAIN, D.Sc.

A. J. GREENAWAY.

Assistant Editor:

CLARENCE SMITH, D.Sc.

Assistant:

A. A. ELDRIDGE, B.Sc.

Indexer:

MARGARET LE PLA, B.Sc.

1921. Vol. CXIX. Part I., pp. 1-949.

LONDON:

GURNEY & JACKSON, 33, PATERNOSTER ROW, E.C. 4.

1921.

PRINTED IN GREAT BRITAIN BY
RICHARD CLAY & SONS, LIMITED,
BUNGAY, SUFFOLK

JOURNAL
OF
THE CHEMICAL SOCIETY.

TRANSACTIONS.

Committee of Publication:

A. J. ALLMAND, M.C., D.Sc.	T. M. LOWRY, C.B.E., D.Sc., F.R.S.
O. L. BRADY, D.Sc.	J. I. O. MASSON, M.B.E., D.Sc.
A. W. CROSSLEY, C.M.G., C.B.E., D.Sc., F.R.S.	G. T. MORGAN, O.B.E., D.Sc., F.R.S.
C. H. DESCH, D.Sc., Ph.D.	T. S. PATTERSON, D.Sc., Ph.D.
M. O. FORSTER, D.Sc., Ph.D., F.R.S.	J. C. PHILIP, O.B.E., D.Sc., Ph.D., F.R.S.
J. T. HEWITT, M.A., D.Sc., Ph.D., F.R.S.	N. V. SIDGWICK, M.A., Sc.D.
J. C. IRVINE, C.B.E., D.Sc., F.R.S.	J. F. THORPE, C.B.E., D.Sc., F.R.S.
C. A. KEANE, D.Sc., Ph.D.	Sir JAMES WALKER, D.Sc., LL.D., F.R.S.

Editors:

J. C. CAIN, D.Sc.

A. J. GREENAWAY.

Assistant Editor:

CLARENCE SMITH, D.Sc.

Assistant:

A. A. ELDRIDGE, B.Sc.

Indiver:

MARGARET LEE PLA, B.Sc.

1921. Vol. CXIX. Part II., pp. 951-end.

LONDON:

GURNEY & JACKSON, 33, PATERNOSTER ROW, E.C. 4.
1921.

PRINTED IN GREAT BRITAIN BY
RICHARD CLAY & SONS, LIMITED,
BUNGAY, SUFFOLK.

INDEX OF AUTHORS' NAMES.

TRANSACTIONS. 1921.

A.

- Abney, (Sir) William de Wiveleslie**, obituary notice of, 529.
Aldous, Wilfrid Major. See **Neril Vincent Sidgwick**.
Alimchandani, Rugehand Lilaram, and **Andrew Norman Meldrum**, derivatives of gallic acid. Part II. Gallic acid (and the cresotic acids) and chloral, 301.
Allmand, Arthur John. See **Hubert Thomas Stanley Britton**.
Allpress, Charles Frederick. See **Frederick Challenger**.
Andrews, (Miss) Alberta Catherine Pritchard. See **John Read**.
Aston, Francis William, mass-spectra and atomic weights, 677.
Atack, Frederick William, the structural isomerism of the oximes. Part I. Criticism of the Hantzsch-Werner hypothesis, and a new theory of the constitution of isomeric oximes, 1175.
Atack, Frederick William, and **Leonard Whinyates**, the structural isomerism of the oximes. Part II. A fourth benzildioxime, 1184.

B.

- Backes, John Valentine, Ralph Winton West**, and (Miss) **Martha Annie Whiteley**, quantitative reduction by hydriodic acid of halogenated malonyl derivatives. Part I. The amides and *s*-di-alkyl and -aryl substituted amides of mono- and di-bromomalononic acid, 359.
Bagster, Lancelot Salisbury, the reaction between nitric acid and copper, 82.
Baker, Julian Levett, and **Henry Francis Everard Hulton**, amylases of the cereal grains—rye, 805.
Bakr, Abu Mohamed, and **Joseph Edgar King**, the determination of the sorption of both solvent and solute. Part I. Preliminary; the system: benzene-iodine-charcoal, 454.

- Baly, Edward Charles Cyril**, and **William Francis Barker**, the photochemical reaction between hydrogen and chlorine and its variation with the intensity of the light, 653.
Baly, Edward Charles Cyril, Isidor Morris Heilbron, and **William Francis Barker**, photocatalysis. Part I. The synthesis of formaldehyde and carbohydrates from carbon dioxide and water, 1025.
Barker, William Francis. See **Edward Charles Cyril Baly**.
Barnett, Edward de Barry, and **James Wilfred Cook**, studies in the anthracene series. Part I., 901.
Barrow, Fred, and **Evon Dalton Griffiths**, condensation of *p*-nitrobenzyl chloride with nitroso-compounds; a new mode of formation of *N*-oximino-ethers, 212.
Barrow, Fred. See also **Alexander McKenzie**.
Bassett, Henry, obituary notice of, 532.
Bassett, Henry, jun., and **Thomas Arthur Simmons**, the system: picric acid-5-phenylacridine, 416.
Bassett, Henry, jun. See also **Lawson John Hudleston**.
Bellars, Albert Ernest, obituary notice of, 2120.
Bennett, George Macdonald, $\alpha\beta'$ -dichlorodiethyl disulphide, 418.
Bennett, George Macdonald, and (Miss) **Edith Muriel Whincop**, some derivatives of monothioethylene glycol, 1860.
Bevan, Edward John, obituary notice of, 2121.
Bhatnagar, Shanti Swarupa, studies in emulsions. Part II. The reversal of phases by electrolytes, and the effects of free fatty acids and alkalis on emulsion equilibrium, 61.
Bhatnagar, Shanti Swarupa, studies in emulsions. Part III. Further investigations on the reversal of type by electrolytes, 1760.

- Birch, Stanley Francis, William Henry Gough, and George Armand Robert Kon**, the formation and stability of spiro-compounds. Part VI. New derivatives of cyclopropane and cyclohexanespirocyclopropane, 1315.
- Blount, Bertram**, obituary notice of, 545.
- Blyth, Alexander Wynter**, obituary notice of, 546.
- Boerce, Alfred Reginald**. See **Henry Thomas Tizard**.
- Bone, William Arthur, and Leonard Silver**, a new method for determining the volatile matter yielded by coals up to various temperatures, 1145.
- Bonnell, (Miss) Jane, and Edgar Philip Ferman**, the colour of iron alum, 1994.
- Bowman, John Herbert**. See **Oscar Lisle Brady**.
- Boyle, John Scott Walker**. See **Alexander McKenzie**.
- Brady, Oscar Lisle, and John Herbert Bowman**, dinitrotolylhydrazines, 894.
- Brady, Oscar Lisle, and William Howison Gibson**, 2:4:6-trinitrotolyl-methylnitroamine, 98.
- Briggs, Samuel Henry Clifford**, valency and co-ordination, 1876.
- Britton, Hubert Thomas Stanley**, the solubility of glucinum sulphate in water and sulphuric acid at 25°, 1967.
- Britton, Hubert Thomas Stanley, and Arthur John Allmand**, the system: potassium sulphate-glucinum sulphate-water at 25°, 1463.
- Brönsted, Johannes Nicolaus**, the influence of salts on chemical equilibria in solutions, 574.
- Buck, Johannes Sybrandt**. See **Isidor Morris Heilbron**.
- Burgess, Henry**. See **Gilbert Thomas Morgan**.
- Burnett, Robert Alexander**. See **John Arnold Cranston**.
- Burrows, George Joseph**, the rate of hydrolysis of methyl acetate by hydrochloric acid in solutions containing sucrose, 1798.
- Burrows, George Joseph, and Eustace Ebenezer Turner**, experiments on the production of compounds containing arsenic as a centre of optical activity, 426.
- some additive compounds derived from arsines, 1448.
- the constitution of the nitroprussides. Part II. The alkylation of nitroprussic acid, 1450.
- Burton, Harold, and James Kenner**, the influence of nitro-groups on the reactivity of substituents in the benzene nucleus. Part III. The partial reduction of the dinitrotoluenes by stannous chloride and hydrochloric acid, 1047.
- Butler, Gerald Snowden**. See **Horace Barratt Dunicliff**.

C.

- Cain, John Cannell**, obituary notice of, 533.
- Cashmore, Albert Eric, Hamilton McCombie, and Harold Archibald Scarborough**, the velocity of reaction in mixed solvents. Part I. The velocity of saponification of two ethyl esters in ethyl alcohol-water mixtures, 970.
- Challenger, Frederick, and Charles Frederick Allpress**, organo-derivatives of bismuth. Part IV. The interaction of the halogen derivatives of tertiary aromatic bismuthines with organo-derivatives of magnesium and mercury, 913.
- Challenor, William Arthur Percival**. See **Gilbert Thomas Morgan**.
- Chapman, William Ronald**, the propagation of flame in mixtures of ethylene and air, 1677.
- Chattaway, Frederick Daniel, and Francis Earl Ray**, the decomposition of tartaric acid by heat, 34.
- Clapham, Henry William**. See **Harry Hepworth**.
- Clendinnen, Frederick William Jeffrey, and Albert Cherbury David Rivett**, the ternary system: ammonium chloride-manganous chloride-water, 1329.
- Coffey, Samuel**, the action of the chlorides of sulphur on substituted ethylenes; the action of propylene on sulphur monochloride and the synthesis of 88-dichlorodibutyl sulphide, 94.
- the mechanism of the oxidation of drying oils as elucidated by a study of the true oxygen absorption. Part I. Linseed oil and its fatty acids, 1152.
- linolenic and hexabromostearic acids and some of their derivatives, 1506.
- the mechanism of the oxidation of drying oils as elucidated by a study of the true oxygen absorption. Part II. Linolenic and linolic acids, 1408.

- Coffey, Samuel**, and **Charles Frederick Ward**, the preparation of some allyl compounds, 1301.
- Cohen, Julius Berend**, and **Herbert Grace Crabtree**, structure and colour of the azine scarlets, 2055.
- Cohen, Julius Berend**. See also **Victor Froelicher**, **John Richard Scott**, and **Akira Shimomura**.
- Collie, John Norman**, and (*Miss*) **Amy Ada Beatrice Reilly**, a new type of iodine compound, 1550.
- Cook, James Wilfred**. See **Edward de Barry Barnett**.
- Copisarow, Maurice**, the Friedel-Crafts' reaction. Part III. Migration of alkyl groups in the benzene nucleus, 1806.
- Copisarow, Maurice** [with **Cyril Norman Hugh Long**], the Friedel-Crafts' reaction. Part II. Migration of halogen atoms in the benzene nucleus, 442.
- Cox, Henry Edward**, the influence of the solvent on the temperature-coefficient of certain reactions; a test of the radiation hypothesis, 142.
- Crabtree, Herbert Grace**. See **Julius Berend Cohen**.
- Cranston, John Arnold**, and **Robert Alexander Burnett**, the adsorption of thorium-B and thorium-C by ferric hydroxide, 2036.
- Crompton, Holland**, and (*Miss*) **Phyllis Mary Triffitt**, dichloroacetates and chlorobromonacetates from $\alpha\beta$ -dichlorovinyl ethyl ether, 1874.
- Crossley, Arthur William**, and (*Miss*) **Nora Renouf**, 1:1-dimethylcyclohexane from methylheptanone, 271.
- D.**
- Davies, William**, the cumulative effect of the chlorine atom and the methyl and sulphonyl chloride groups on substitution in the benzene nucleus. Parts I. and II., 853, 876.
- Denham, William Smith**, the methylation of cellulose. Part III. Homogeneity of product and limit of methylation, 77.
- Doubleday, (Miss) Ida**. See **Tom Sidney Moore**.
- Drew, Harry Dugald Keith**. See **Gilbert Thomas Morgan**.
- Driver, John**, and **James Brierley Firth**, the sorption of alcohol and water by animal charcoal, 1126.
- Druce, John Gerald Frederick**, ethylstannic acid and derivatives, 758.
- Dudley, Harold Ward**, aminocyclcholine esters. Part I. Glycylcholine, 1255.
- Duff, James Cooper**, complex metallic amines. Part V. *cis*-Succinatodithylenediaminecobaltic salts, and other cobaltamine salts containing a seven-membered ring in the complex, 385.
- complex metallic amines. Part VI. *cis*-Phthalato-, *cis*-homophthalato- and other diethylenediaminecobaltic salts, 1982.
- Dufton, Arthur Felix**, the separation of miscible liquids by distillation, 1988.
- Dunncliff, Horace Barratt**, and **Gerald Snowden Butler**, ethyl hydrogen sulphate, 1384.
- Dunnill, Sydney**, overvoltage. Part I. A comparison of the methods of determination, especially as applied to the mercury cathode, 1981.
- Dutt, Paritra Kumar, Hugh Robinson Whitehead**, and **Arthur Wormall**, the action of diazo-salts on aromatic sulphonamides. Part I., 2088.
- Dutt, Sukhibhushan**. See **Edwin Roy Watson**.
- E.**
- Ewhank, (Miss) Eliaor Katharine**. See **Nevil Vincent Sidgwick**.
- F.**
- Fairbourne, Arthur**, the *o*-dimethyl-anthraquinones and their derivatives, 1573.
- Fairbourne, Arthur**, and **Harold Toms**, α -monosodium glyceroxide: its structure and application, 1035.
- a new synthesis of oxazines, 2076.
- Fargher, Robert George**, arylazoglyoxalincarboxylic acids, 158.
- Fargher, Robert George**, and **Harold King**, additive compounds of antipyrilaminodiacetic acid and its salts with neutral salts, 292.
- Fargher, Robert George**, and **William Henry Perkin, jun.**, *m*-opianic acid (4:5-dimethoxy-*o*-aldehydobenzoic acid), 1724.
- Fargher, Robert George**, and **Frank Lee Pyman**, 4- β -methylaminoethylglyoxaline, 734.
- Farmer, Ernest Harold**, and **Christopher Kellie Ingold**, the conditions underlying the formation of unsaturated and cyclic compounds from halogenated open-chain derivatives. Part III. Products derived from halogenated glutaric acids, 2001.

- Field, (Miss) Ellen**, mitragynine and mitraversine, two new alkaloids from species of *Mitragyna*, 887.
- Findlay, Alexander**, and **William Thomas**, influence of colloids on the rate of reactions involving gases. Part I. Decomposition of hydroxylamine in the presence of colloidal platinum, 170.
- Firth, James Brierley**, some factors governing the sorptive capacity of charcoal; sorption of ammonia by cocoa-nut charcoal, 926.
the sorption of hydrogen by amorphous palladium, 1120.
- Firth, James Brierley**. See also **John Driver**.
- Fleck, Alexander**. See **Thomas Wallace**.
- Fletcher, (Sir) Lazarus**, obituary notice of, 547.
- Forster, Martin Onslow**, and **William Bristol Saville**, studies in the camphane series. Part XXXIX. *p*-Aminophenylaminocampbor (camphoryl-*p*-phenylenediamine), 789.
- Friend, John Albert Newton**, a colloid theory of the corrosion and passivity of iron, and of the oxidation of ferrous salts, 932.
electrochemical conceptions of valency, 1040.
- Froelicher, Victor**, and **Julius Berend Cohen**, the nitro- and amino-derivatives of *m*-hydroxybenzoic acid, 1425.
- G.**
- Garner, William Edward**, and **Douglas Norman Jackman**, catalysis of the mutarotation of dextrose by metals, 1936.
- Garner, William Edward**, and **Kichimatsu Matsuno**, the explosion of acetylene and nitrogen, 1903.
- Gautier, Emile Justin Armand**, obituary notice of, 537.
- Geake, Arthur**. See **Maximilian Hierenstein**.
- Gibson, David Templeton**, and **Alexander Killen Macbeth**, the action of alkyl nitrates on piperidine, 438.
- Gibson, William Hoviverson**. See **Oscar Lisle Brady**.
- Glasstone, Samuel**, physical chemistry of the oxides of lead. Part I. The solubility of lead monoxide, 1689.
physical chemistry of the oxides of lead. Part II. The supposed enantiomorphism of lead monoxide, 1914.
the direct iodometric estimation of lead peroxide, 1997.
- Glover, Thomas**. See **Gilbert Thomas Morgan**.
- Goddard, Archibald Edwin**, organo-derivatives of thallium. Part I. Some reactions of thalliumdialkyl haloids, 672.
metallic derivatives of nitrophenolic compounds. Part I. Interaction of barium, strontium, and calcium hydroxides with the mononitrophenols, 1161.
organo-derivatives of thallium. Part II. Interaction of thalliumdialkyl hydroxides with nitrophenols and nitroresols, 1310.
- Goddard, Archibald Edwin**. See also (Mrs.) **Dorothy Goddard**.
- Goddard, (Mrs.) Dorothy**, and **Archibald Edwin Goddard**, metallic derivatives of nitrophenolic compounds. Part II. Some nitrotolylloxides of metals of Group II., 2044.
- Gough, William Henry**. See **Stanley Francis Birch**.
- Graham, Hugh**, and **Alexander Killen Macbeth**, colorations produced by substituted nitroforms, 1362.
- Grant, Reginald Lindsay**, and **Frank Lee Pyman**, the nitro- and amino-derivatives of 4-phenylglyoxaline, 1893.
- Green, Stanley Joseph**, and **Thomas Slater Price**, the chlorovinylchlorarsines, 448.
- Griffith, Robert Owen**, and **William James Shutt**, the decomposition of ozone by light of the visible spectrum, 1948.
- Griffiths, Euan Dalton**. See **Fred Barrow**.
- Grist, William Robinson**. See **Gilbert Thomas Morgan**.
- Gupta, Biraj Mohan**, an investigation on the influence of negative groups of different character on the reactivity of hydrogen atoms carried by the same carbon atom. Part I., 293.
- H.**
- Hamer, (Miss) Frances Mary**, a comparison of some isomeric isocyanines, 1432.
- Hammick, Dalziel Llewellyn**, and **John Mylne Mullaly**, the dimorphism of potassium ethyl sulphate, 1802.
- Harding, Leonard**, the melting points of mixtures of *o*- and *p*-toluenesulphonyl chlorides, 260.
the sulphonation of toluene with chlorosulphonic acid, 1261.

- Harris, John Edmund' Guy.** See *William Hobson Mills.*
- Haworth, Robert Downs, and Arthur Lapworth,** reduction of emulsified nitro-compounds. Part II. Some extensions of the method, 768.
- Haworth, Walter Norman, and Edmund Langley Hirst,** the constitution of the disaccharides. Part V. Cellobiose (cellose), 193.
- Hedley, Thomas Johnson,** an improved gas combustion furnace for use in organic analysis, 1242.
- Heilbron, Isidor Morris, and Johannes Sybrandt Buck,** the reactivity of doubly-conjugated unsaturated ketones. Part I. 4'-Dimethylamino-2-hydroxydistyryl ketone, 1500.
the reactivity of doubly-conjugated unsaturated ketones. Part II. The action of hydroxylamine, semicarbazide, and phenylhydrazine on 4'-dimethylamino-2-hydroxydistyryl ketone and its methyl ether, 1515.
- Heilbron, Isidor Morris.** See also *Edward Charles Cyril Baly.*
- Henderson, George Gerald, and Joseph Kenneth Marsh,** contributions to the chemistry of the terpenes. Part XX. The action of hypochlorous acid on pinene, 1492.
- Henry, Thomas Anderson, and Humphrey Paget,** chenopodium oil, 1714.
- Henstock, Herbert,** the bromine compounds of phenanthrene. Part I., 55.
9:10-dihydrophenanthrene, 1461.
- Hepworth, Harry,** the action of the Grignard reagent on certain nitric esters, 251.
the action of the Grignard reagent on certain tervalent organo-iodo-compounds, 1244.
accelerated formation of magnesium alkyl and aryl haloids, 1249.
- Hepworth, Harry, and Henry William Clapham,** the action of the Grignard reagent on certain organo-sulphur compounds, 1188.
- Hickinbottom, Wilfred John.** See *Gilbert Thomas Morgan.*
- Rigson, Geoffrey Isherwood,** the reaction between persulphates and silver, 2048.
- Hinshelwood, Cyril Norman,** some physico-chemical problems connected with the stability of explosives, 721.
- Hirst, Edmund Langley.** See *Walter Norman Haworth.*
- Hudleston, Lawson John, and Henry Bassett, jun.,** equilibria of hydrofluosilicic acid, 403.
- Hulton, Henry Francis Esmond.** See *Julian Leveit Baker.*
- I.
- Ingold, Christopher Kelk,** the conditions underlying the formation of unsaturated and cyclic compounds from halogenated open-chain derivatives. Part I. Products derived from α -halogenated glutaric acids, 305.
the mechanism underlying the reaction between ethyl cyanoacetate and tautomeric substances of the keto-enol type, 329.
experiments on the synthesis of the polyacetic acids of methane. Part I. The conditions controlling synthesis by the cyanoacetic ester method, and the preparation of methanetriacetic acid, 341.
the conditions underlying the formation of unsaturated and cyclic compounds from halogenated open-chain derivatives. Part II. Products derived from α -halogenated adipic acids, 351.
- Ingold, Christopher Kelk, and Edward Arthur Perren,** experiments on the synthesis of the polyacetic acids of methane. Part III. Conditions controlling synthesis by the cyanoacetic ester method, 1532.
experiments on the synthesis of the polyacetic acids of methane. Part IV. Conditions of formation by the cyanoacetic ester method of stable methanetriacetic esters, 1565.
- Ingold, Christopher Kelk, and Walter James Powell,** experiments on the synthesis of the polyacetic acids of methane. Part II. Some abnormal condensations of malonic and cyanoacetic esters with halogenated methanes, 1222.
experiments on the synthesis of the polyacetic acids of methane. Part V. The preparation of carboxymethanetriacetic acid, 1869.
the reversibility of the Michael reaction, 1876.
- Ingold, Christopher Kelk, and Jocelyn Field Thorpe,** the chemistry of the glutaric acids. Part XII. The simultaneous occurrence of 1:2- and of 1:3-addition to "nascent" glutaric ester, 492.
- Ingold, Christopher Kelk.** See also *Ernest Harold Farmer.*
- Iredale, Thomas,** the rôle of protective colloids in catalysis. Part I., 109.

Iredale, Thomas, the soaps as protective colloids for colloidal gold, 625.
Irvine, James Colquhoun, and **John Walter Hyde Oldham**, the constitution of polysaccharides. Part III. The relationship of *l*-glucosan to *d*-glucose and to cellulose, 1744.

J.

Jackman, Douglas Norman. See **William Edward Garner**.
Jaeger, Frans Maurits, the action of light of short wave-lengths on some organic acids and their salts, 2070.
Jenkins, William Job, interaction of acetylene and mercuric chloride. Part II., 747.
Jones, F. R. See **Gilbert Thomas Morgan**.
Jones, Leslie Amiel. See **Gilbert Thomas Morgan**.

K.

Keffler, Leon Pierre George, some derivatives of anthraquinonedimide, 1476.
Kenner, James, and **Wilfrid Victor Stubbings**, a second form of 6:6'-dinitrotriphenic acid, and its conversion into new cyclic systems, 593.
Kenner, James, and **Ernest Witham**, the influence of nitro-groups on the reactivity of substituents in the benzene nucleus. Part IV. The condensation of ethyl 3- and 5-nitro-2-chlorobenzoates with hydrazines, 1053.
 the influence of steric factors on intramolecular condensation, 1452.
Kenner, James. See also **Harold Burton**.
Kermack, William Ogilvy, **William Henry Perkin, jun.**, and **Robert Robinson**, harmine and harmaline. Part V. The synthesis of norharman, 1602.
Kinch, Edward, obituary notice of, 2123.
King, Harold, derivatives of sulphur in commercial salvarsan. Parts I. and II., 1107, 1415.
King, Harold. See also **Robert George Fargher**.
King, Joseph Edgar. See **Abu Mohamed Bakr**.
King, (Miss) Ruth, production of picric acid from the sulphonic acids of phenol, 2105.
Kipping, Frederic Stanley, organic derivatives of silicon. Part XXIV. *di*-Derivatives of silicoethane, 647.

Kipping, Frederic Stanley, and **James Edwin Sands**, organic derivatives of silicon. Part XXV. Saturated and unsaturated silicohydrocarbons, Si_4Ph_8 , 830.
 organic derivatives of silicon. Part XXVI. Piperidine as an analytical reagent, 848.
Knaggs, (Miss) Isabel Ellie, and **Richard Henry Vernon**, organic derivatives of tellurium. Part III. Crystallographic and pharmacological comparison of the α - and β -dimethyltelluronium dihaloids, 105.
Kon, George Armand Robert, the formation and stability of spiro-compounds. Part IV. Ketones derived from open-chain and cyclic glutaric acids, 810.
Kon, George Armand Robert, and **Arnold Stevenson**, the formation of derivatives of tetrahydronaphthalene from γ -phenyl fatty acids, 87.
Kon, George Armand Robert. See also **Stanley Francis Birch**.
Krishna, Sri, phenolcoumarin and resorcinolcoumarin, 1420.
Krishna, Sri, and **Frank George Pope**, the condensation of *m*-dimethylaminophenol with benzaldehyde, 286.
 phenolcitraconein, 289.
Kumar, Kalikumar. See **(Sir) Praphulla Chandra Ráy**.

L.

Laing, (Miss) Mary Evelyn, the hydration of the fibres of soap curd. Part III. Sorption of sodium palmitate, 1669.
Lal, Jivan. See **Bawa Kartar Singh**.
Lal, Miri. See **Bawa Kartar Singh**.
Lambourne, Herbert. See **William Hobson Mills**.
Lapworth, Arthur, and **(Mrs.) Lenore Klets Pearson**, reduction of emulsified nitro-compounds. Part I. β -Phenylhydroxylamine from nitrobenzene, 765.
Lapworth, Arthur. See also **Robert Downs Haworth**.
Le Sueur, Henry Rondel, obituary notice of, 2125.
Le Sueur, Henry Rondel, and **Cyril Christian Wood**, the mechanism of the action of fused alkalis. Part II. The action of fused potassium hydride on phenylglyceric acid, 1697.
Levin, (Miss) Esther. See **Fredrick Maurice Bowe**.
Long, Cyril Norman Hugh. See **Maurice Coplansrow**.

Longstaff, George Blundell, obituary notice of, 2127.

Losanitch, Sima M., note on dithiocarbazine acid, 763.

M.

McBain, James William, and **Herbert Ernest Martin**, the hydration of the fibres of soap curd. Part I. The degree of hydration determined in experiments on sorption and salting out, 1369.

McBain, James William, and **Cyril Sebastian Salmon**, the hydration of the fibres of soap curd. Part II. The dew-point method, 1374.

Macbeth, Alexander Killen, and **David Doig Pratt**, the halogen derivatives of nitroform, 354.

the labile nature of the halogen atoms in substituted nitromethanes, 1356.

Macbeth, Alexander Killen. See also **David Templeton Gibson**, and **Hugh Graham**.

McClelland, Ernest Wilson. See **Samuel Smiles**.

McCombie, Hamilton. See **Albert Eric Cashmore**.

McKenzie, Alexander, and **Fred Barrow**, β -amino- β -phenylpropionophenone, 69.

McKenzie, Alexander, and **John Scott Walker Boyle**, action of magnesium phenyl haloids on diphenylchloroacetyl chloride; constitution of triphenylvinyl alcohol, 1131.

McKie, (Miss) Phyllis Violet, determination of the composition of mixtures of eugenol and isoeugenol benzoates by means of melting points, 777.

McKie, (Miss) Phyllis Violet. See also **Kennedy Joseph Previtt Orton**.

McLeod, Charles Maxwell, and (**Mrs.**) **Gertrude Maud Robinson**, researches on pseudo-bases. Part III. Dialkylaminomethyl alkyl ethers and sulphides, 1470.

McMillan, Andrew. See **Thomas Stewart Patterson**.

Mann, Frederick George, (Sir) William Jackson Pope, and **Richard Henry Vernon**, the interaction of ethylene and sulphur monochloride, 634.

Manning, Alexander Bernard, the influence of neutral salts on the hydrolysis of ethyl formate, 2079.

Marrack, (Miss) Muriel Tregarthen. See **Tom Sidney Moore**.

Marsh, Joseph Kenneth. See **George Gerald Henderson**.

Martin, Herbert Ernest. See **James William McBain**.

Mason, Frederick Alfred, β -hydroxy- β -3:4-methylenedioxyphenylethylamine and its derivatives, 1077.

Matsuno, Kichimatsu. See **William Edward Garner**.

Maxted, Edward Bradford, the influence of mercury, sulphur, arsenic, and zinc on the catalytic activity of platinum, 225.

on the relation between the occlusive power of palladium for hydrogen and its activity for catalytic hydrogenation, 1280.

Meldrum, Andrew Norman. See **Rupchand Lilaram Alimchandani**.

Mills, Edmund James, obituary notice of, 2130.

Mills, William Hobson, John Edmund Guy Harris, and **Herbert Lambourne**, the Doebner-Miller quinaldine synthesis, 1294.

Mills, William Hobson, and **Charles Reynolds Nodder**, the optically active forms of the ketodilactone of benzophenone-2:4:2':4'-tetracarboxylic acid, 2094.

Mitchell, Alec Duncan, studies on hypophosphorous acid. Part III. Its reaction with mercuric chloride, 1266.

Moir, James, the calculation of the colour of "cyclic" coloured substances, 1654.

Monier-Williams, Gordon Wickham, the hydrolysis of cotton cellulose, 803.

Moore, Benjamin, photosynthetic processes in the air, upon the land, and in the sea in relation to the origin and continuance of life on the earth, 1556.

Moore, Tom Sidney, and (**Miss**) **Ida Doubleday**, some new tricyclic bases, 1170.

Moore, Tom Sidney, (Miss) Muriel Tregarthen Marrack, and (**Miss**) **Annie Kathleen Froud**, the application of Hofmann's reaction to substituted phthalimides, 1786.

Morgan, Gilbert Thomas, and **Henry Burgess**, non-aromatic diazonium salts. Part VI. 3:5-Dimethylisoxazole-4-diazonium salts and their azo-derivatives, 697.

non-aromatic diazonium salts. Part VII. The diazo-reaction in the isoxazole series, 1546.

Morgan, Gilbert Thomas, and **William Arthur Percival Challenor** [with **F. R. Jones**], *o*-chlorodinitrotoluenes. Part III. Bases derived from 2-chloro-4:5-dinitrotoluene, 1537.

- Morgan, Gilbert Thomas, and Harry Dugald Keith Drew**, researches on residual affinity and co-ordination. Part III. Reactions of selenium and tellurium acetylacetones, 610. researches on residual affinity and co-ordination. Part V. Gallium acetylacetone and its analogues, 1058.
- Morgan, Gilbert Thomas, and Thomas Glover**, *o*-chlorodinitrotoluenes. Part IV. 2-Chloro-3,4-dinitrotoluene, 1700.
- Morgan, Gilbert Thomas, and William Robinson Grist**, arylsulphonylnaphthylenediamines and their sulphonic acids, 602.
- Morgan, Gilbert Thomas, and Wilfred John Hickinbottom**, studies in the *n*-butyl series. Part I. Aryl *n*-propyl ketones, 1879.
- Morgan, Gilbert Thomas, and Leslie Amiel Jones**, *o*-chlorodinitrotoluenes. Part II., 187.
- Morgan, Gilbert Thomas, and J. D. Main Smith**, researches on residual affinity and co-ordination. Part IV. The constitution of simple and complex cobaltic quinoneoxime lakes, 704. researches on residual affinity and co-ordination. Part VI. Selenodithionie acid and its metallic salts, 1066.
- Morgan, Gilbert Thomas, and Dudley Cloete Vining**, dihydroxynaphthaldehydes, 177.
- Morgan, Gilbert Thomas, and (Miss) Dorothy Webster**, diazo-derivatives of 4'-amino-1-phenyl-5-methylbenzothiazole (dehydrothio-*p*-toluidine), 1070.
- Morgan, John David, and Richard Vernon Wheeler**, phenomena of the ignition of gaseous mixtures by induction coil sparks, 239.
- Mullaly, John Myne**. See *Dalziel Llewellyn Hammick*.

N.

- Nagel, David Henry**, obituary notice of, 551.
- Naik, Kuverji Gosai**, the formation and properties of dithio-ketones ($R_2C:S:S$) and dithio-ethers ($R_2S:S$). Parts I. and II., 879, 1231.
- interaction of sulphur monochloride and organic acid amides, 1166.
- Newbery, Edgar**, chlorine overvoltages, 477.

- Nierenstein, Maximilian**, the constitution of catechin. Part III. Synthesis of aacatechin, 164.
- Nierenstein, Maximilian, Charles William Spiers, and Arthur Geake**, gallotannin. Part XII., 275.
- Nodder, Charles Reynolds**. See *William Hobson Mills*.
- Norris, Woodford Stanley Gowan Plucknette, and Jocelyn Field Thorpe**, the formation and stability of *spiro*-compounds. Part V. Derivatives of cyclohexanespirocyclohexane and of cyclopentanespirocyclohexane, 1199.

O.

- O'Connor, Edmund Arthur**, the binary system: aniline-acetic acid, 400.
- Odling, William**, obituary notice of, 553.
- Oldham, John Walter Hyde**. See *James Colquhoun Irvine*.
- Orton, Kennedy Joseph Previté, and (Miss) Phyllis Violet McKie**, preparation of chloropierin from picric acid and trinitrotoluenes, 29.

P.

- Packer, John, and Ian William Warb**, cupritartrates, 1348.
- Paget, Humphrey**. See *Thomas Anderson Henry*.
- Patterson, Thomas Stewart, and Andrew McMillan**, the action of ammonia on acetone, 269.
- Pearman, Sydney Albert**, derivatives of *m*-xylene, 717.
- Pearson, (Mrs.) Leonore Kletz**. See *Arthur Lapworth*.
- Perkin, William Henry, jun.**, the action of sodium on phenyl acetate, 1284.
- Perkin, William Henry, jun.**, and *Sydney Glenn Preston Plant*, derivatives of tetrahydrocarbazole, 1825.
- Perkin, William Henry, jun.**, and *Eric Robinson*, studies on the configuration of $\alpha\alpha'$ -dibromodibasic acids. Part I. The dibromoadipic acids; synthesis and resolution of *trans*-cyclopentane-1:2:3-tricarboxylic acid, 1392.
- Perkin, William Henry, jun.**, and *Harold Archibald Scarborough*, resolution of *dl-trans*-cyclopentane-1:3-dicarboxylic acid, 1400.
- Perkin, William Henry, jun.**, and *Alan Francis Titley*, epicamphor. Part II., 1089.
- Perkin, William Henry, jun.**, and *Stanley Horwood Tucker*, the oxidation of carbazole, 216.

- Perkin, William Henry, jun.** See also *Robert George Fargher*, and *William Ogilvy Kermack*.
- Perman, Edgar Philip.** See (*Miss*) *Jane Bonnell*.
- Perren, Edward Arthur.** See *Christopher Kelk Ingold*.
- Pickering, Spencer Percival Umfreville,** obituary notice of, 564.
- Pickles, Alwyn,** negative adsorption of alkali haloids by wood charcoal, 1278.
- Pike, William Herbert,** obituary notice of, 539.
- Plant, Sydney Glenn Preston.** See *William Henry Perkin, jun.*
- Pope, Frank George.** See *Sri Krishna*.
- Pope, (Sir) William Jackson,** and *James Leonard Brierley Smith*, the interaction of sulphur monochloride and substituted ethylenes, 396.
- Pope, (Sir) William Jackson.** See also *Frederick George Mann*.
- Porter, (Miss) Mary Winearts,** crystallographic descriptions of some pyridine and picoline derivatives, 1769.
- Powell, Alan Richard.** See *Walter Raymond Schoeller*.
- Powell, Walter James.** See *Christopher Kelk Ingold*.
- Pratt, David Doig.** See *Alexander Killen Macbeth*.
- Price, Thomas Slater.** See *Stanley Joseph Green*.
- Proud, (Miss) Annie Kathleen.** See *Tom Sidney Moore*.
- Pyman, Frank Lee.** See *Robert George Fargher*, and *Reginald Lindsay Grant*.
- Read, John,** and *Henry George Smith*, piperitone. Part I. The occurrence, isolation, and characterisation of piperitone, 779.
- Reilly, (Miss) Amy Ada Beatrice.** See *John Norman Collie*.
- Rancuf, (Miss) Nora.** See *Arthur William Crossley*.
- Report of the Council,** 513.
- Report of the International Committee on Physico-chemical Symbols,** 502.
- Reynolds, William Colebrook,** on interfacial tension. Part I. The statistical measurement of interfacial tension in absolute units, 460.
- on interfacial tension. Part II. The relation between interfacial and surface tension in sundry organic solvents in contact with aqueous solutions, 466.
- Rivett, Albert Cherbury David.** See *Frederick William Jeffrey Glendinning*.
- Robertson, (Sir) Robert,** some properties of explosives, 1.
- Robinson, Eric.** See *William Henry Perkin, jun.*
- Robinson, (Mrs.) Gertrude Maud.** See *Charles Maxwell McLeod*.
- Robinson, Robert.** See *William Ogilvy Kermack*.
- Rowe, Frederick Maurice,** and (*Miss*) *Esther Levin*, studies in the dihydronaphthalene series. Part II. The ar-dihydro- α -naphthols and their derivatives, 2021.
- Rubie, Howard Ernest.** See *Nevil Vincent Sidgwick*.
- Ruffie, John,** obituary notice of, 541.

R.

- Rau, Madyar Gopal.** See *John Lionel Simonsen*.
- Ray, Francis Earl.** See *Frederick Daniel Chattaway*.
- Rây, Jnanendra Nath,** syntheses in the thianthren series, 1959.
- Rây, (Sir) Praphulla Chandra,** and *Kalkumar Kumar*, the molecular conductivity of some sulphonium compounds in acetone, 1643.
- Rây, Priyadarajan,** and *Pulin Vihari Sarkar*, compounds of hexamethylene-tetramine with complex metallic salts and acids, 390.
- Read, John,** and (*Miss*) *Alberta Catherine Frithard Andrews*, studies of halogenohydrins and related derivatives in the cinnamic acid series. Part I., 1774.

S.

- Salmon, Cyril Sebastian.** See *James William McBain*.
- Sands, James Edwin.** See *Frederic Stanley Kipping*.
- Sarkar, Pulin Vihari.** See *Priyadarajan Rây*.
- Saville, William Bristow.** See *Martin Onslow Forster*.
- Scarborough, Harold Archibald.** See *Albert Eric Cashmore*, and *William Henry Perkin, jun.*
- Schoeller, Walter Raymond,** and *Alan Richard Powell*, investigations into the analytical chemistry of tantalum, columbium, and their mineral associates. I. The use of tartaric acid in the analysis of natural tantalocolumbates. II. The separation of zirconium from tantalum and from columbium, 1927.

- Scott, John Richard**, and **Julius Berend Cohen**, on some carbamido-acids and their hydantoins, 684.
- Shields, John**, obituary notice of, 569.
- Shimomura, Akira**, and **Julius Berend Cohen**, physical and physiological properties of some hydrogenated quinoline compounds, 740.
a new method for the resolution of asymmetric compounds, 1816.
- Short, Wallace Frank**, a new method for the preparation of α -acylphenylhydrazines, 1445.
- Sidgwick, Nevil Vincent**, and **Wilfrid Major Aldous**, influence of position on the solubility and volatility of the mono- and di-nitrophenols, 1001.
- Sidgwick, Nevil Vincent**, and (Miss) **Elvior Katharina Ewbank**, the stability of tautomeric formaldehydephenylhydrazones, 486.
the influence of position on the solubilities of the substituted benzoic acids, 979.
- Sidgwick, Nevil Vincent**, and **Howard Ernest Rubie**, the solubility and volatility of the chloro- and nitro-anilines and of their acetyl derivatives, 1013.
- Silberrad, Oswald**, researches on sulphuryl chloride. Part I. Influence of catalysts; a convenient method of chlorinating benzene, 2029.
- Silver, Leonard**. See **William Arthur Bone**.
- Simmonds, Charles**, obituary notice of, 542.
- Simmons, Thomas Arthur**. See **Henry Bassett, jun.**
- Simonsen, John Lionel**, the essential oil from *Andropogon Scurarancusa*, Jones, and the constitution of piperitone, 1644.
- Simonsen, John Lionel**, and **Madgar Gopal Rau**, synthesis of 1:6-dihydroxy-2-methylanthraquinone, 1339.
- Singh, Bawa Kartar**, and **Miri Lal**, studies in substituted quaternary azonium compounds containing an asymmetric nitrogen atom. Part IV. Additive compounds of thiocarbamide with azonium iodides, 210.
- Singh, Bawa Kartar**, **Mahan Singh**, and **Jivan Lal**, studies on the dependence of optical rotatory power on chemical constitution. Part IV. Aryl derivatives of bisiminocamphor, 1871.
- Singh, Mahan**. See **Bawa Kartar Singh**.
- Slator, Arthur**, yeast crops and the factors which determine them, 115.
- Smart, Bertram James**, obituary notice of, 544.
- Smiles, Samuel**, and **Ernest Wilson McClelland**, derivatives of 3-oxy(1)-thionaphthen, 1310.
- Smiles, Samuel**, and (Miss) **Jessie Stewart**, *m*-lithiobenzoic acid, 1792.
- Smith, Henry George**. See **John Ead.**
- Smith, J. D. Main**. See **Gilbert Thomas Morgan**.
- Smith, James Leonard Brierley**. See (Sir) **William Jackson Pope**.
- Smith, Robert Christie**. See **Robert Wright**.
- Spiers, Charles William**. See **Mazilian Nierenstein**.
- Stedman, Edgar**, a new degradation product of physostigmine, 891.
- Stevenson, Arnold**. See **George Armand Robert Kon**.
- Stewart, (Miss) Jessie**. See **Samuel Smiles**.
- Stubbings, Wilfrid Victor**. See **James Kenner**.
- Sugden, Samuel**, on reduction by metals in acid solutions. Part I. The reduction of acid ferric sulphate solutions by zinc and magnesium, 233.
the determination of surface tension from the rise in capillary tubes, 1483.

T.

- Thomas, Richard**, and **Edward Thomas Williams**, the catalytic oxidation of ferrous salts in acid solutions, 749.
- Thomas, William**, inorganic complex salts. Part I. Potassium ferrioxalate and potassium cobaltimalonate, 1149.
- Thomas, William**. See also **Alexander Findlay**.
- Thorne, Percy Cyril Lesley**, the solubility of ethyl ether in solutions of sodium chloride, 262.
- Thorpe, Jocelyn Field**. See **Christopher Kell Ingold**, and **Woodford Stanley Gosvan Flucknetie Norris**.
- Titely, Alan Francis**. See **William Henry Perkin, jun.**
- Tizard, Henry Thomas**, and **Alfred Reginald Boeree**, the volumetric estimation of mixtures of acids and of bases, and of polybasic acids or bases, 132.
- Toms, Harold**. See **Arthur Fairbourne Triffitt**, (Miss) **Phyllis Mary**. See **Holland Crompton**.

Tucker, Stanley Horwood. See *William Henry Perkin, jun.*
Turner, Eustace Ebenezer. See *George Joseph Burrows.*

V.

Vernon, Richard Henry, organic derivatives of tellurium. Part IV. Action of ammonia and the alkalis upon α -dimethyltelluronium di-iodide, 687. obituary notice of, 2132.
Vernon, Richard Henry. See also (*Miss*) *Isabel Elkie Knaggs*, and *Frederick George Mann.*
Vining, Dudley Cloete. See *Gilbert Thomas Morgan.*

W.

Walker, Eric Everard, surface tensions of salts of the fatty acids and their mixtures, 1521.
Wallace, Thomas, and Alexander Fleck, some properties of fused sodium hydroxide, 1839.
Ward, Charles Frederick, the use of aluminium chloride and ferric chloride in the preparation of phenolphthalein, 850.
Ward, Charles Frederick. See also *Samuel Coffey.*
Wark, Ian William. See *John Packer.*
Watson, Edwin Roy, and Sikkidhushan Dutt, dyes derived from phenanthraquinone, 1211.
Webster, (Miss) Dorothy. See *Gilbert Thomas Morgan.*

West, Ralph Winton. See *John Valentine Backes.*
Wheeler, Richard Vernon. See *John David Morgan.*
Whincop, (Miss) Edith Muriel. See *George Macdonald Bennett.*
Whinyates, Leonard. See *Frederick William Atack.*
Whitehead, Hugh Robinson. See *Pavitra Kumar Dutt.*
Whiteley, (Miss) Martha Annie. See *John Valentine Backes.*
Williams, Edward Thomas. See *Richard Thomas.*
Wilson, Leonard Philip, obituary notice of, 511.
Witham, Ernest. See *James Kenner.*
Wood, Cyril Christian. See *Henry Randal Le Sueur.*
Wormall, Arthur. See *Pavitra Kumar Dutt.*
Wren, Henry, and Edward Wright, studies in the resolution of racemic acids by optically active alcohols. Part II. The resolution of atrolactic and α -hydroxy-*S*-phenylpropionic acids by *L*-menthol, 798.
Wright, Edward. See *Henry Wren.*
Wright, Robert, and Robert Christie Smith, the effect of temperature on platinum black and other finely-divided metals, 1683.

Y.

Yeoman, Ernest Wickham, trithiocarbonates and perthiocarbonates, 38.

INDEX OF SUBJECTS.

TRANSACTIONS. 1921.

Single organic compounds of known empirical formula will be found in the
Formula Index, p. 2155.

A.

- Acacatechin**, synthesis of (NIERENSTEIN), 164.
- Acetylacetonones**, metallic (MORGAN and DREW), 1058.
- Acids**, estimation of, volumetrically (TIZARD and BOERKE), 132.
fatty, surface tensions of salts of, and their mixtures (WALKER), 1521.
organic, and their salts, action of light on (JAEGER), 2070.
- α -Acylphenylhydrazines** (SHORT), 1445.
- Adsorption** by charcoal (BAKER and KING), 454; (FIRTH), 926; (DRIVER and FIRTH), 1126.
negative, by wood charcoal (PICKLES), 1278.
- Afinity**, residual, and co-ordination (MORGAN and DREW), 610, 1058; (MORGAN and SMITH), 704, 1066.
- Alkali haloids**, negative adsorption of, by charcoal from aqueous solutions (PICKLES), 1279.
additive compounds of antipyrilaminodiacetic acid and its salts with (FARGHER and KING), 292.
- Alkalies**, fused, mechanism of the action of (LE SUEUR and WOOD), 1697.
- Alkaline earth haloids**, additive compounds of antipyrilaminodiacetic acid and its salts with (FARGHER and KING), 292.
- Alkaloids**, salts of, with hexabromostearic acid (COFFEY), 1309.
- Alkyl nitrates**, action of pipedidine with (GIBSON and MACBETH), 438.
- Aluminium chloride**, use of, in the preparation of phenolphthalein (WARD), 850.
- Amides**, acid organic, action of sulphur monochloride on (NAIK), 1166.
- Ammies**, complex metallic (DUFF), 385, 1982.
- Ammonia**, adsorption of, by charcoal (FIRTH), 926.
action of, on acetone (PATTERSON and McMILLAN), 249.
- Ammonium tri- and per-thiocarbonates** (YEOMAN), 51.
chloride, equilibrium of manganous chloride, water, and (CLENDINNEEN and RIVET), 1329.
selenodithionate (MORGAN and SMITH), 1068.
iron alum, colour of (BOSNELL and PERMAN), 1994.
- Amylase** of rye (BAKER and HULTON), 805.
- Analysis**, organic, gas combustion furnace for (HEDLEY), 1242.
volumetric, of acids and bases (TIZARD and BOERKE), 132.
- Andropogon Sacarancusa***, essential oil from (SIMONSEN), 1644.
- Annual General Meeting**, 513.
- Anthracene series**, studies in the (BARNETT and COOK), 501.
- Antimony triiodide**, action of phenyldimethylarsine with (BURROWS and TURNER), 1449.
- Arsenic triiodide**, action of phenyldimethylarsine with (BURROWS and TURNER), 1449.
- Arsenic organic compounds** (BURROWS and TURNER), 1448.
optically active, preparation of (BURROWS and TURNER), 426.
- Arylazoglyoxalincarboxylic acids** (FARGHER), 158.
- Asymmetric compounds**, resolution of (SHIMOMURA and COHEN), 1816.
- Atmospheric air**, ignition of mixtures of ethylene and (CHAPMAN), 1677.
ignition of mixtures of methane and (MORGAN and WHEELER), 241.
- Atomic weights and mass-spectra** (ASTON), 677.
- Atrolactic acid**, $C_9H_{10}O_2$.
- Azine scarlets**, structure and colour of (COHEN and CRABTREE), 2055.
- Azonium compounds**, substituted quaternary, containing an asymmetric nitrogen atom (SINGH and LAL), 210.

B.

Balance sheets of the Chemical Society and of the Research Fund. See Annual General Meeting, 513.

Barium *tri*- and *per*-thiocarbonates (YEOMAN), 43.
selenodithionate (MORGAN and SMITH), 1068.

Bases, tricyclic (MOORE and DOUBLEDAY), 1170.
estimation of, volumetrically (TIZARD and BOEGER), 132.

ψ -Bases, researches on (MCLEOD and ROBINSON), 1470.

Benzene nucleus, influence of the chlorine atom and the methyl and sulphonyl chloride groups on substitution in the (DAVIES), 853, 876.

influence of nitro-groups on the reactivity of substituents in the (BURTON and KENNER), 1047; (KENNER and WITHAM), 1053.

migration of alkyl groups in the (COPISAROW), 1806.

migration of halogen atoms in the (COPISAROW), 442.

Benzolic acids, substituted, influence of position on the solubility of (SIDGWICK and EWBANK), 979.

Bismuth triiodide, action of phenyldimethylarsine with (BURROWS and TURNER), 1449.

Bismuth organic compounds:—

Bismuthines, tertiary aromatic, halogen derivatives, action of, with magnesium and mercury organic compounds (CHALLENGER and ALLPRESS), 913.

n-Butyl series, studies in the (MORGAN and HICKINBOTTOM), 1879.

C.

Cesium selenodithionate (MORGAN and SMITH), 1068.

Calcium *tri*- and *per*-thiocarbonates (YEOMAN), 47.

Camphane series, studies in the (FORSTER and SAVILLE), 789.

Carbamido-acids, and their hydantoins (SCOTT and COHEN), 664.

Carbazole, $C_{12}H_9N$.

Carbohydrates, photosynthesis of (BALY, HEILBRON, and BARKER), 1025.

Caronimide, $C_7H_5O_2N$.

Catalysis, function of protective colloids in (IREDALE), 109.

Catalysts, influence of, on the chlorination of benzene (SILBERRAD), 2026.

Catechin, $C_{15}H_{14}O_6$.

Cathodes, mercury, overvoltage at (DUNNILL), 1081.

Cellobiose, $C_{12}H_{22}O_{11}$.

Cellose. See Cellobiose.

Cellulose, cotton, hydrolysis of (MONIER-WILLIAMS), 803.

methylation of (DENHAM), 77.

Charcoal, animal, adsorption of water and alcohol by (DRIVER and FIRTH), 1126.

cocoa-nut, adsorption of ammonia by (FIRTH), 926.

wood, adsorption of benzene by, alone, and from iodine solution (BAKR and KING), 454.

negative adsorption of alkali haloids by (PICKLES), 1278.

Chemical constitution and optical rotation (B. K. and M. SINGH and LAL), 1971.

influence of, on reactivity (GUPTA), 298.

reactions, influence of the solvent on the temperature coefficient of (COX), 142.

Chenopodium oil, constituents of (HENRY and PAGER), 1714.

Chlorine, overvoltage during liberation of (NEWBURY), 477.

photochemical reaction of hydrogen with (BALY and BARKER), 653.

Choline, $C_5H_{15}O_2N$.

Coal, determination of the volatile matter from (BONE and SILVER), 1145.

Cobalt bases (*cobaltamines*), complex (DUFF), 385, 1982.

Cobalt lakes with quinoneoximes, constitution of (MORGAN and SMITH), 704.

Colloids, influence of, on the velocity of reactions involving gases (FINDLAY and THOMAS), 170.

protective, function of, in catalysis (IREDALE), 109.

soaps as (IREDALE), 625.

Colloidal solutions, interfacial and surface tensions of (KEYNOLDS), 471.

Colour, calculation of, of coloured cyclic compounds (MOIR), 1654.

Colouring matters, cobaltic quinoneoxime (MORGAN and SMITH), 704.

spiro-Compounds, formation and stability of (KON), 810; (NORRIS and THORPE), 1199; (BIRCH, GOUGH, and KON), 1815.

Co-ordination and residual affinity (MORGAN and DREW), 610, 1058; (MORGAN and SMITH), 704, 1066.

and valency (BRIGGS), 1876.

Copper, action of nitric acid on (BAGSTER), 82.

Copper, action of fused sodium hydroxide on (WALLACE and FLECK), 1849.

Copper organic compounds:—

Cupritartrates (PACKER and WARK), 1848.

isocyanines, isomeric (HAMER), 1432.

Cyclic compounds, formation of, from halogenated open-chain derivatives (INGOLD), 305, 951; (FARMER and INGOLD), 2001.

coloured, calculation of the colour of (MOIR), 1634.

D.

Diazo salts, action of, on aromatic sulphonamides (DUTT, WHITEHEAD, and WORMALL), 2088.

Diazonium salts, non-aromatic (MORGAN and BURGESS), 697, 1546.

Diethylaminomethyl alkyl ethers and sulphides, preparation of (MCLEOD and ROBINSON), 1472.

Dihydronaphthalene series, studies in the (ROWE and LEVIN), 2021.

Dimethylpyrone, $C_8H_6O_2$.

Disaccharides, constitution of (HAWORTH and HIRST), 193.

Distillation, separation of miscible liquids by (DUFTON), 1988.

m-Dithiobenzoic acid, $C_6H_4O_2S_2$.

E.

Ellagic acid, $C_{14}H_6O_8$.

Emulsions, studies in (BHATNAGAR), 61, 1760.

Enzymes:—

Amylase.

Epicamphor, $C_{10}H_{16}O$.

Equilibria, chemical, influence of salts on, in solution (BRÜNSTED), 574.

Eserine, $C_{12}H_{20}O_2N_2$.

Esters, $\alpha\beta$ -unsaturated, condensation of, with sodio-malonic esters (INGOLD and POWELL), 1976.

Ethers, ditbio-, formation and properties of (NAIK), 379, 1231.

Ethyl esters, velocity of saponification of (CASHMORE, McCOMB, and SCARROUCH), 970.

Eucalyptus oil, constituents of (READ and SMITH), 779.

Eugenol, $C_{10}H_{12}O_2$.

Explosives, properties of (ROBERTSON), 1. thermal decomposition of (HINSHELWOOD), 721.

F.

Ferric and Ferrous salts. See under Iron.

Flame, propagation of, in mixtures of ethylene and air (CHAPMAN), 1677.

Fluorene, $C_{15}H_{10}$.

Fluorine:—

Hydrofluosilicic acid, equilibria of (HUDDLETON and BASSETT), 403.

Formaldehydophenylhydrazones, substituted tautomeric, stability of (SIDGWICK and EWRANK), 486.

Friedel-Crafts' reaction (COPISAROW), 442, 1806.

Furnace, gas combustion, for use in organic analysis (HEDLEY), 1242.

G.

Gallic acid derivatives (ALIMCHANDANI and MELDRUM), 201.

Gallium organic compounds (MORGAN and DREW), 1058.

Gallotannin (NIERENSTEIN, SPIERS, and GRAKE), 275.

Gases, ignition of mixtures of (MORGAN and WHEELER), 239; (CHAPMAN), 1677.

Gas reactions, influence of colloids on the kinetics of (FINDLAY and THOMAS), 170.

Glucinum (beryllium) sulphate, solubility of, in water and sulphuric acid (BRITTON), 1967.

equilibrium in the system, potassium sulphate, water, and (BRITTON and ALLMAND), 1463.

β -Glucosan, $C_6H_{10}O_6$.

Glutaconic acids, chemistry of (INGOLD and THORPE), 492.

Gold, colloidal, soaps as protective colloids for (IREDALE), 625.

Grignard reagents, action of, on nitric esters (HEPWORTH), 1786.

action of, on organic iodine compounds (HEPWORTH), 1244.

action of, on organic sulphur compounds (HEPWORTH and CHAPMAN), 1188.

H.

Harmaline, $C_{13}H_{11}ON_2$.

Harmine, $C_{12}H_{10}N_2$.

Hofmann's reaction, application of, to substituted phthalimides (MOORE, MARRACK, and PROUD), 1786.

Hugo Müller Lecture (MOORE), 1555.

Hydrofluosilicic acid. See under Fluorine.

Hydrogen, photochemical reaction of chlorine with (BALY and BARKER), 653.

absorption of, by palladium (FIRTH), 1120; (MAXTED), 1280.

hydrogen atoms, influence of negative groups on the reactivity of (GURTA), 298.

hydroxy-acids, esters, condensation of ethylsodiocynoacetate with (INGOLD), 336.

hydroxylamine, decomposition of, in presence of colloidal platinum (FINDLAY and THOMAS), 170.

hypophosphorous acid. See under Phosphorus.

I.

ignition of mixtures of gases (MORGAN and WHEELER), 239.
of mixtures of ethylene and air (CHAPMAN), 1677.

idium organic compounds (MORGAN and DREW), 1062.

interfacial tension (REYNOLDS), 460, 466.

intramolecular condensation, influence of steric factors on (KENNER and WITHAM), 1452.

ndine organic compounds, new type of (COLLIE and REILLY), 1550.

action of Grignard reagents on (HEPWORTH), 1244.

ron, corrosion and passivity of (FRIEND), 932.

action of fused sodium hydroxide on (WALLACE and FLECK), 1842.

ammonium alum, colour of (BONNELL and PERMAN), 1994.

Ferric chloride, use of, in the preparation of phenolphthalein (WARD), 850.

hydroxide, adsorption of thorium-B and -C by (CRANSTON and BURNETT), 2036.

sulphate, reduction of acid solutions of, by magnesium and zinc (SUGDEN), 233.

Ferrous salts, theory of the oxidation of (FRIEND), 932.

catalytic oxidation of, in acid solution (THOMAS and WILLIAMS), 749.

K.

ketones derived from glutamic acids (KON), 810.

unsaturated, reactivity of (HEILBRON and BUCK), 1500, 1515.

ketones, α -thio-, formation and properties of (NAIK), 379, 1231.

L.

lead peroxide, estimation of, iodometrically (GLASSTONE), 1997.

Lead oxides, physical chemistry of (GLASSTONE), 1689, 1914.

Lectures delivered before the Chemical Society (ROBERTSON), 1; (ASTON), 677; (MOORE), 1555.

Life, origin and continuance of, on the earth (MOORE), 1555.

Linolenic acid, $C_{18}H_{30}O_2$.

Linolic acid, $C_{18}H_{32}O_2$.

Linseed oil, composition of (COFFEY), 1413.

oxidation of (COFFEY), 1152.

Liquids, interfacial and surface tensions of (REYNOLDS), 466.

miscible, separation of, by distillation (DUFTON), 1988.

Lithium selenodithionate (MORGAN and SMITH), 1067.

M.

Magnesium, reduction of acid solutions of ferric sulphate by (SUGDEN), 233.

tri- and per-thiocarbonates (YEOMAN), 50.

Magnesium organic compounds, action of, with halogen derivatives of tertiary aromatic bismuthines (CHALLENGER and ALLPRESS), 913.
alkyl and aryl haloids, catalysis in the formation of (HEPWORTH), 1249.

Malonyl derivatives, halogenated, melting points of, and their quantitative reduction by hydriodic acid (BACKES, WEST, and WHITELEY), 359.

Manganese:—

Manganous chloride, equilibrium of ammonium chloride, water, and (CLEMMINXEN and RIVETT), 1329.

Mercury:—

Mercuric chloride, action of acetylene with (JENKINS), 747.

action of hypophosphorous acid with (MITCHELL), 1266.

Mercury organic compounds, action of, with halogen derivatives of tertiary aromatic bismuthines (CHALLENGER and ALLPRESS), 913.

Mercury cathode. See Cathode.

Metallic salts, complex (THOMAS), 1140.
compounds of hexamethylene-tetramine with (RAY and SARKAR), 390.

Metals, reduction by, in acid solutions (SUGDEN), 233.

finely-divided, effect of temperature on (WRIGHT and SMITH), 1683.

heated, action of sodium hydroxide with (WALLACE and FLECK), 1841.

Methylene group, reactivity of the (GUPTA), 298.
Michael reaction, reversibility of the (INGOLD and POWELL), 1978.
Mitragyne, alkaloids from species of (FIELD), 887.
Mitragynine, $C_{22}H_{33}O_5N$.
Mitraveranine, $C_{22}H_{33}O_5N_2$ (?).
Molecular conductivity of sulphonium compounds in acetone (RAY and KUMAR), 1643.

N.

Nickel, action of fused sodium hydroxide on (WALLACE and FLECK), 1847.
Nitric acid. See under Nitrogen.
Nitro-compounds, emulsified, reduction of (LAPWORTH and PEARSON), 765; (HAWORTH and LAPWORTH), 768.
Nitrogen, explosion of acetylene and (GARNER and MATSUNO), 1903.
Nitric acid, action of, on copper (BAGSTER), 82.
 esters, action of Grignard reagents on (HEPWORTH), 251.
Nitroprussic acid, $C_6H_5ON_5Fe$.
Nitroprussides, constitution of (BURROWS and TURNER), 1450.
Nitroso-compounds, condensation of *p*-nitrobenzyl chloride with (BARROW and GRIFFITHS), 212.
Norharman, $C_{11}H_9N_2$.
Norharmol, $C_{11}H_9ON_2$.

O.

Obituary notices:—
 Sir William de Wiveleslie Abney, 529.
 Henry Bassett, 532.
 Albert Edward Bellars, 2120.
 Edward John Bevan, 2121.
 Bertram Blount, 545.
 Alexander Wynter Blyth, 545.
 John Cannell Cain, 533.
 Sir Lazarus Fletcher, 547.
 Armand Gautier, 537.
 Edward Kinch, 2123.
 Henry Rondel Le Sueur, 2125.
 George Blundell Longstre, 2127.
 Edmund James Mills, 2100.
 David Henry Nagel, 551.
 William Odling, 553.
 Spencer Percival Umfreville Pickering, 564.
 William Herbert Pike, 539.
 John Ruffie, 541.
 John Shields, 569.
 Charles Simmonds, 542.
 Bertram James Smart, 544.
 Richard Henry Vernon, 2132.
 Leonard Philip Wilson, 571.

Oils, drying, oxidation of (COFFEY), 1152, 1408.
Optical rotation and chemical constitution (B. K. and M. SINGH and LAL), 1971.
Overtoltage (NEWBERRY), 477; (DUNNILL), 1081.
Oxazines, synthesis of (FAIRBOURNE and TOMS), 2076.
Oximes, isomerism of (ATAKE), 1175; (ATAKE and WHINYATES), 1184.
N-Oximino-ethers, formation of (BARROW and GRIFFITHS), 212.
3-Oxy(1)thionaphthen, C_8H_6OS .
Ozone, decomposition of, by light (GRIFFITH and SHUTT), 1948.

P.

Palladium, absorption of hydrogen by (FIRTH), 1120.
 relation between the occlusion of hydrogen by, and its catalytic activity (MAXTED), 1280.
Palmitic acid, $C_{16}H_{32}O_2$.
Persulphates. See under Sulphur.
Phenanthraquinone colouring matters (WATSON and DUTT), 1211.
Phenols, nitro-, metallic derivatives of (GODDARD), 1161; (D. and A. E. GODDARD), 2044.
Phenolcitraconein, $C_{17}H_{14}O_4$.
Phenolcoumarain, $C_{11}H_{10}O_3$.
Phenolphthalein, $C_{20}H_{14}O_4$.
Phenolsulphonic acids, preparation of picric acid from (KING), 2105.
5-Phenylacridine, $C_{18}H_{13}N$.
Phenylpiazone, $C_{11}H_{10}O_2N_2$.
Phosphorus triiodide, action of phenyldimethylarsine with (BURROWS and TURNER), 1449.
Hypophosphorous acid, studies on (MITCHELL), 1266.
Photocatalysis (BALY, HEILBRON, and BARKER), 1025.
Photochemical reactions with organic acids and their salts (JAEGER), 2070.
Photosynthesis in relation to the origin and continuance of life on the earth (MOORE), 1555.
Phthalimides, substituted, application of Hofmann's reaction to (MOORE, MARRACK, and PROUD), 1786.
Physico-chemical symbols, International, 502.
Physostigmine. See Eserine.
Picoline derivatives, crystallography of (PORTER), 1769.
Piperidine, $C_5H_{11}N$.
Piperitone, $C_{10}H_{16}O$.

Platinum, influence of arsenic, mercury, sulphur, and zinc on the catalytic activity of (MAXTED), 225.

Platinum-black, effect of temperature on (WRIGHT and SMITH), 1683.

Polysaccharides, constitution of (IRVINE and OLDHAM), 1744.

Potassium *tri-* and *per*-thiocarbonates (YEOMAN), 46.

hydroxide, fused, action of, on phenylglyceric acid (LE SUEUR and WOOD), 1697.

sulphate, equilibrium in the system, glucinum sulphate, water, and (BRITTON and ALLMAND), 1463.

Pyridine, C_5H_5N .

Pyridine derivatives, crystallography of (PORTER), 1789.

Q.

Quinaldine, $C_{10}H_9N$.

Quinine, $C_{20}H_{24}O_2N_2$.

Quinolins compounds, hydrogenated, physical and physiological properties of (SHIMOMURA and COHEN), 740.

R.

Racemic acids, resolution of, by means of optically active alcohols (WREN and WRIGHT), 798.

Radiation hypothesis applied to chemical reactions (COX), 142.

Reactivity, influence of constitution on (GUPTA), 248.

Rubidium selenodithionate (MORGAN and SMITH), 1068.

sulphites (MORGAN and SMITH), 1069.

Eye, amylase of (BAKER and HULTON), 805.

S.

Salvarsan, commercial, sulphur derivatives in (KING), 1107, 1415.

Selenodithionic acid and its metallic salts (MORGAN and SMITH), 1066.

Silicon organic compounds (KIPPING), 647; (KIPPING and SANDS), 830, 843.

Silver, action of solutions of *per*-sulphates on (HIGSON), 2048.

Soap curd, hydration of the fibres of (McBAIN and MARTIN), 1369; (McBAIN and SALMON), 1374; (LAING), 1669.

solutions, interfacial and surface tensions of (REYNOLDS), 473.

Soaps, use of, as protective colloids for colloidal gold (FREDALE), 625.

Sodium, action of, on phenyl acetate (PERKIN), 1284.

CXIX.

Sodium *tri-* and *per*-thiocarbonates (YEOMAN), 40.

chloride, solubility of ethyl ether in solutions of (THORNE), 262.

hydroxide, fused, properties of (WALLACE and FLECK), 1839.

selenodithionate tetrahydrate (MORGAN and SMITH), 1067.

Solubility, influence of position in substitution on (SIDGWICK and EW-BANK), 979; (SIDGWICK and ALDOUS), 1001; (SIDGWICK and RUBIE), 1013.

Solutions, influence of salts on chemical equilibria in (BRÖNSTED), 574.

Solvents, mixed, velocity of reaction in (CASHMORE, McCOMBIE, and SCARBOROUGH), 970.

Spectra, mass, and atomic weights (ASTON), 677.

Stannic chloride. See under Tin.

Stearic acid, $C_{18}H_{36}O_2$.

Strontium *tri-* and *per*-thiocarbonates (YEOMAN), 49.

Strychnine, $C_{21}H_{22}O_2N_2$.

Sulphonamides, aromatic, action of diazo-salts on (DUTT, WHITEHEAD, and WORMALL), 2088.

Sulphonium compounds, molecular conductivity of, in acetone (RAY and KUMAR), 1643.

Sulphur monochloride, action of, on organic acid amides (NAIK), 1166.

action of, on ethylene (MANN, POPE, and VERNON), 634.

action of, on substituted ethylenes (POPE and SMITH), 396.

chlorides, action of, on substituted ethylenes (COFFEY), 94.

Sulphuryl chloride, chlorination of benzene with (SILBERRAD), 2029.

Persulphates, action of solutions of, on metallic silver (HIGSON), 2048.

Sulphur organic compounds, action of Grignard reagents on (HEP-WORTH and CLAPHAM), 1188.

Sulphuryl chloride. See under Sulphur.

Surface tension, determination of, from capillary rise (SUGDEN), 1488.

of saturated liquids (REYNOLDS), 467.

of salts of the fatty acids (WALKER), 1521.

T.

Tantalum:—

Tantalocolumbates, analysis of (SCHÖELLER and POWELL), 1927.

Terpenes, chemistry of (HENDERSON and MARSH), 1492.

Tellurium organic compounds (KNAGGS and VERNON), 105; (VERNON), 687.

Temperature-coefficients of chemical reactions (COX), 142.

4 E

Tetrahydrocarbazole, $C_{12}H_{11}N$.

Thallium organic compounds (GODDARD), 672, 1312.

Thianthren series, syntheses in the (RAY), 1959.

Thorium-B and **-C**, adsorption of, by ferric hydroxide (CRANSTON and BURNETT), 2036.

Tin :—

Stannic chloride, action of phenyldimethylarsine with (BURROWS and TURNER), 1449.

Tin organic compounds (DRUCE), 758.

V.

Unsaturated compounds, formation of, from halogenated open-chain compounds (INGOLD), 305, 951 ; (FARMER and INGOLD), 2001.

V.

Valency, electrochemical theories of (FRIEND), 1040.

and co-ordination (BRIGGS), 1876.

Velocity of reaction in mixed solvents (CASHMORE, McCOMBIE, and SCARBOROUGH), 970.

involving gases, influence of colloids on (FINDLAY and THOMAS), 170.

Y.

Yeast, factors influencing the growth of (SLATOR), 115.

Z.

Zinc, reduction of acid solutions of ferric sulphate by (SUGDEN), 233.

Zirconium, separation of, from columbium and from tantalum (SCHOELLER and POWELL), 1927.

FORMULA INDEX.

THE following index of organic compounds of known empirical formula is arranged according to Richter's system (see *Lexikon der Kohlenstoff-Verbindungen*).

The elements are given in the order C, H, O, N, Cl, Br, I, F, S, P, and the remainder alphabetically.

The compounds are arranged—

Firstly, in groups according to the number of carbon atoms (thus C_1 group, C_2 group, etc.).

Secondly, according to the number of other elements besides carbon contained in the molecule (thus 5 IV indicates that the molecule contains five carbon atoms and four other elements).

Thirdly, according to the nature of the elements present in the molecule (given in the above order).

Fourthly, according to the number of atoms of each single element (except carbon) present in the molecule.

Salts are placed with the compounds from which they are derived. The chlorides, bromides, iodides, and cyanides of quaternary ammonium bases, however, are registered as group-substances.

C_1 Group.

CH_4 Methane, ignition of mixtures of air and (MORGAN and WHEELER), 241; lability of halogen atoms in substituted nitro-derivatives of (MACBETH and PRATT), 1866; synthesis of the polyacetic acids from (INGOLD), 341; (INGOLD and POWELL), 1222, 1869; (INGOLD and PERREN), 1582, 1865.

CCl_4 Carbon tetrachloride, purification and condensations of (INGOLD and THORPE), 1227.

I II

$CHCl_3$ Chloroform, additive compound of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1510.

CH_2O Formaldehyde, photosynthesis of (BALY, HEILBRON, and BARKER), 1025.

CH_2O_2 Formic acid, preparation of (COFFEY and WARD), 1303.

CH_2I_2 Methylene iodide, preparation of (PERKIN and SCARBOROUGH), 1408.

CH_2S_2 Trithiocarbonic acid, salts of (YEOMAN), 38.

CH_2S_4 Pertrithiocarbonic acid, salts of (YEOMAN), 38.

I III

$CHON_2$ Nitroform, preparation of halogen derivatives of (MACBETH and PRATT), 354; colorations produced by substituted derivatives of (GRAHAM and MACBETH), 1362.

CH_2NS_2 Thiocarbamide, additive compounds of azonium iodides with (SINGH and LAL), 210.

$H_2N_2S_2$ Dithiocarbazine acid, and its salts (LOSANITCH), 763.

O_2NCl_3 Chloropicrin, preparation of (ORTON and MCKIE), 29.

O_2N_2Cl Chlorotrinitromethane (MACBETH and PRATT), 354.

C_2 Group.

H_2 Acetylene, explosion of nitrogen and (GARNER and MATSUNO), 1903; action of mercuric chloride with (JENKINS), 747.

H_2 Ethylene, propagation of flame in mixtures of air and (CHAPMAN), 1677; action of sulphur monochloride with (MANN, POPZ, and VERNON), 634.

2 II

- C_2H_4O , Acetic acid, equilibrium of aniline with (O'CONNOR), 400; additive compounds of, with benzene and 4'-dimethylamino-2-hydroxydistyryl ketone (HEILBRON and BUCK), 1511.
 C_2H_5I , Ethyl iodide, velocity of reaction of sodium β -naphthoxide and (COX), 149.
 C_2H_5O , Ethyl alcohol, additive compound of 4'-dimethylamino-2-hydroxy-distyryl ketone with (HEILBRON and BUCK), 1510.
 $C_2H_{11}N$, Diethylamine, action of ethyl nitrate on (GIBSON and MACBETH), 441.

2 III

- C_2HOCl_2 , Chloral, condensation of cresotic and gallic acids with (ALIMCHANDANI and MELDRUM), 201.
 $C_2H_3O_2Cl_2$, Dichloroacetic acid, preparation of esters of (CROMPTON and TRIFFITT), 1874.
 $C_2H_4Cl_2As$, β -Chlorovinyl dichloroarsine (GREEN and PRICE), 451.
 C_2H_5ONa , Sodium ethoxide, action of carbon tetrachloride with (INGOLD and POWELL), 1228.
 $C_2H_5O_2N$, Ethyl nitrate, preparation of (HEPWORTH), 254; action of diethylamine on (GIBSON and MACBETH), 441.
 $C_2H_3Br_3Sn$, Ethylstannic tribromide (DRUCE), 761.
 C_2H_6OS , Monothioethylene glycol (BENNETT), 422; condensation reactions of (BENNETT and WHINCOP), 1860.
 $C_2H_3O_2Sn$, Ethylstannic acid, and its salts (DRUCE), 758.
 $C_2H_5O_2S$, Ethyl hydrogen sulphate, equilibrium of the formation of (DUNN-CLIFF and BUTLER), 1384; potassium salt, dimorphism of (HAMMICK and MCLELLAY), 1802.
 $C_2H_4N_2S_2$, Methyl dithiocarbazinate (LOSANTICH), 764.
 $C_2H_4N_2S_2$, Sulphidodithiocarbamide, dihydrochloride of (NAIK), 1168.
 C_2H_4ITl , Thalliumdimethyl iodide (GODDARD), 674.
 $C_2H_4I_2Te$, Dimethyltelluronium diiodides, crystallography and pharmacological properties of (KNAGGS and VERNON), 105.
 $C_2H_4I_2Te$, Dimethyltelluronium tetraiodide (VERNON), 695.
 C_2H_4ON , $\beta\beta$ -Dimethylhydroxylamine, and its salts (HEPWORTH), 256.
 C_2H_4OTl , Thalliumdimethyl hydroxide, salts of (GODDARD), 674.
 $C_2H_4Cl_2Sn$, Ethylchlorostannic acid, and its salts (DRUCE), 761.
 $C_2H_5O_2Te$, Dimethyltelluronium dihydroxide, nitrates of (VERNON), 694.

2 IV

- $C_2H_3O_2ClBr$, Chlorobromoacetic acid, preparation of esters of (CROMPTON and TRIFFITT), 1874.
 $C_2H_5O_2ClS$, Chloroethanesulphonic acid, sodium salt (BENNETT), 420.

 C_3 Group.

- C_3H_6 , Propylene, action of sulphur monochloride on (COFFEY), 94.

3 II

- C_3H_7Cl , Allyl chloride, preparation of (COFFEY and WARD), 1305.
 C_3H_8O , Acetone, action of ammonia on (PATTERSON and McMILLAN), 269.
 Allyl alcohol, preparation of (COFFEY and WARD), 1303.
 $C_3H_7O_2$, Ethyl formate, influence of neutral salts on the hydrolysis of (MANNING), 2079.
 Methyl acetate, rate of hydrolysis of (BURROWS), 1798.

3 III

- $C_3H_7O_2Na$, α -Sodium glyceroxide (FAIRBOURNE and TOMS), 1035.
 C_3H_7IAs , Methyl ethyl iodocarsine (BURROWS and TURNER), 433.

3 IV

- $C_2H_2O_2N_2Br$ Bromomalonomide (BACKES, WEST, and WHITELEY), 364.
 $C_2H_2O_2ClS$ Chloropropanesulphonic acid, barium salt (COFFEY), 96; (POPE and SMITH), 398.

C_4 Group.

- $C_4H_8O_2$ Allyl formate, preparation of (COFFEY and WARD), 1303.
 $C_4H_4O_6$ Tartaric acid, decomposition of, by heat (CHATTAWAY and RAY), 34; complex enpic salts of (PACKER and WARR), 1348.
 $C_4H_8O_2$ Ethyl acetate, additive compound of 4'-dimethylamino-2-hydroxy-distyryl ketone with (HEILBRON and BUCK), 1510.
 $C_4H_{10}O$ Ethyl ether, solubility of, in solutions of sodium chloride (THORNE), 262.

4 III

- $C_4H_4Cl_2As$ $\beta\beta'$ -Dichlorodivinylchloroarsine (GREEN and PRICE), 452.
 $C_4H_8OCl_2$ $\alpha\beta$ -Dichlorovinyl ethyl ether, preparation of dichloro- and chloro-bromo-acetates from (CROMPTON and TRIFFITT), 1874.
 $C_4H_8ON_3$ *cyclo*Propanonesemicarbazone (INGOLD), 329.
 $C_4H_8Cl_2S$ $\beta\beta'$ -Dichlorodiethyl disulphide (BENNETT), 418.
 $C_4H_8Cl_2S_3$ $\beta\beta'$ -Dichlorodiethyl trisulphide (MANN, POPE, and VERNON), 639.
 $C_4H_{11}OTl$ Thalliumdiethyl hydroxide, salts of (GODDARD), 675.

4 IV

- $C_4H_8O_2N_2S$ *N*-Sulphidobisacetamide (NAIK), 1167.
 $C_4H_8O_2N_2Br$ Bromomalondimethylamide (BACKES, WEST, and WHITELEY), 365.
 $C_4H_9O_2ClS$ β -Chlorobutane- γ -sulphonic acid, barium salt (POPE and SMITH), 399.
 $C_4H_{12}OI_2Te_2$ Diiodotetramethylditelluronium oxide (VERNON), 691.

4 V

- $C_4H_7ONCl_2Co$ *trans*-Dichlorodiethylenediaminecobaltic hydroxide, salts of (DUFF), 1987.

C_5 Group.

- $C_5H_8O_4$ Δ^2 -*cyclo*Propene-1:2-dicarboxylic acid (FARMER and INGOLD), 2015.
 C_5H_8N Pyridine, additive compound of 4'-dimethylamino-2-methoxydistyryl ketone phenylhydrazone with (HEILBRON and BUCK), 1520.
 $C_5H_8O_5$ *cyclo*Propanol-1:2-dicarboxylic acid, and its silver salt (INGOLD), 326.
 $C_5H_8O_5$ Lactonic acids of $\alpha\alpha'$ -dihydroxyglutaric acids, and their silver salts (INGOLD), 322.
 $C_5H_8O_5$ α -Hydroxyglutaric acid (INGOLD), 313.
 $C_5H_8O_5$ $\alpha\alpha'$ -Dihydroxyglutaric acids (INGOLD), 322.
 $C_5H_{11}N$ Piperidine, action of, on alkyl nitrates (GIBSON and MACETH), 438; action of, on silicon organic compounds (KIPPING and SANDS), 848.

5 III

- C_5H_8OBr 1-Bromocyclopropane-1:2-dicarboxylic acid, and its salts (INGOLD), 325.
 $C_5H_8O_4N_2$ 4-Nitro-3:5-dimethylisoxazole (MORGAN and BURGESS), 699.
 $C_5H_8O_4Br_2$ Dibromoglutaric acids (INGOLD), 317.
 $C_5H_8O_4N$ Ethyl cyanoacetate, syntheses by means of (INGOLD), 329, 341; (INGOLD and FERREN), 1582, 1885; sodium derivative, condensation of carbon tetrachloride with (INGOLD and POWELL), 1229.

- $C_5H_8O_2N_2$ 3:5-Dimethylisoxazole-4-diazonium hydroxide, salts of (MORGAN and BURGESS), 702.
 $C_5H_8ON_2$ 4-Amino-3:5-dimethylisoxazole, and its hydrochloride (MORGAN and BURGESS), 700.
 $C_5H_{15}O_2N$ Choline, crystalline, preparation of (DUDLEY), 1260.

5 IV

- $C_6H_5ON_4Fe$ Nitroprussic acid, and its salts (BURROWS and TURNER), 1450.
 C_6H_8ONI 4-Iodo-3:5-dimethylisoxazole (MORGAN and BURGESS), 1547.
 $C_6H_5O_2Br_2Te$ Tellurium acetylacetone dibromide (MORGAN and DREW), 616.
 $C_6H_5O_2I_2Te$ Tellurium acetylacetone diiodide (MORGAN and DREW), 617.
 $C_6H_8O_2N_2S_2$ Dithiomesoxodimethylamide (NAIK), 384.

C₆ Group.

- C_6H_6 Benzene, adsorption of, by charcoal (BAKER and KING), 454; chlorination of, with sulphuryl chloride (SILBEREAD), 2029; additive compound of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1510.
 C_6H_{12} β -Ethyl- Δ^2 -butylene (KON), 521.

6 II

- $C_6H_4O_2$ *p*-Benzoquinone, additive compound of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1511.
 C_6H_6O Phenol, additive compound of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1511.
 C_6H_7N Aniline, equilibrium of acetic acid with (O'CONNOR), 400; velocity of reaction of ω -bromoacetophenone and (COX), 145.
 $C_6H_8O_2$ Methoxycyclopropane-1:2-dicarboxylic acid, and its silver salt (INGOLD), 327.
 $C_6H_{10}O_6$ β -Glucosan, preparation and relationships of (IRVINE and OLIPHAN), 1744.
 α -Methoxyglutaric acid, and its silver salt (INGOLD), 320.
 $C_6H_{13}N_3$ 4-*S*-Methylaminoethylglyoxaline, and its salts (FARGHER and PYMAN), 734.
 $C_6H_{12}O_6$ Dextrose, mutarotation of, and its catalysis by metals (GARNER and JACKMAN), 1936.
 $C_6H_{12}N_4$ Hexamethylenetetramine, compounds of, with metallic salts and acids (RAY and SARKAR), 390.

6 III

- $C_6H_3O_3N_3$ *s*-Trinitrobenzene, additive compounds of, with 4'-dimethylamino-2-hydroxydistyryl ketone and 4'-dimethylamino-2-methoxydistyryl ketone (HEILBRON and BUCK), 1511.
 $C_6H_3O_3N_3$ Picric acid, preparation of (KING), 2105; equilibrium of 5-phenyl-acridine with (BASSETT and SIMMONS), 416.
 $C_6H_3O_{12}Fe$ Ferrioxalic acid, potassium salt (THOMAS), 1140.
 $C_6H_8O_4N_2$ *m*-Dinitrobenzene, additive compounds of, with 4'-dimethylamino-2-hydroxydistyryl ketone and 4'-dimethylamino-2-methoxydistyryl ketone (HEILBRON and BUCK), 1511.
 $C_6H_5O_2N_2$ Dinitrophenols, influence of position on the solubility and volatility of (SIDGWICK and ALDOUS), 1001.
 $C_6H_5O_2N$ Nitrophenols, influence of position on the solubility and volatility of (SIDGWICK and ALDOUS), 1001.
 $C_6H_5Br_2Bi$ Phenylbromobismuthine, preparation of (CHALLENGER and ALLPRESS), 919.
 $C_6H_5O_2N_2$ Nitroanilines, solubility and volatility of (SIDGWICK and REINE), 1013.

- C_6H_5NCl Chloroanilines, solubility and volatility of (SIDGWICK and RUBIE), 1013.
 $C_6H_2Cl_3As$ $\beta\beta'\beta''$ -Trichlorotrivinylarsine (GREEN and PRICE), 452.
 C_6H_5ON β -Benzildioxime (ATACK and WHINYATES), 1184.
 β -Phenylhydroxylamine, preparation of, from nitrobenzene (LAPWORTH and PEARSON), 765.
 $C_6H_4O_2Br_2$ Dibromoadipic acids (PERKIN and ROBINSON), 1392.
 $C_6H_4O_2I_2$ Di-iodoadipic acids (INGOLD), 964.
 C_6H_5NI Methylpyridinium iodide, mercuri-iodide of, and its crystallography (PORTER), 1770.
 $C_6H_{12}N_2S_4$ Methyl bismethyldithiocarbamate (LOSANITCH), 765.
 $C_6H_{12}Cl_2S_2$ $\beta\beta'$ -Dichlorodi-*n*-propyl sulphide (COFFEY), 97; (POPE and SMITH), 397.
 $C_6H_{12}Cl_2S_2$ Ethylene bis- β -chloroethyl sulphide (BENNETT and WHINCOP), 1862.
 $C_6H_{12}O_2S_2$ $\beta\beta'$ -Dihydroxydi-*n*-propyl sulphide (COFFEY), 96.
 $C_6H_{12}O_2S_2$ Ethylene bis- β -hydroxyethyl sulphide (BENNETT and WHINCOP), 1862.

6 IV

- C_6H_5ONCl *o*- and *m*-Chloronitrosobenzenes (HAWORTH and LAPWORTH), 772.
 $C_6H_5O_2NS$ 6-Nitrophenol-*o*-sulphonic acid, and its salts (KING), 1417.
 C_6H_5ONCl *m*-Chlorophenylhydroxylamine (HAWORTH and LAPWORTH), 773.
 $C_6H_5O_2N_2Cl$ 2-Chloro-5-nitrophenylhydrazine (PERKIN and PLANT), 1837.
 $C_6H_5O_2NS$ Nitroaminophenol-*o*-sulphonic acids (KING), 1418.
 $C_6H_5O_2NS$ 6-Aminophenol-*o*-sulphonic acid (KING), 1417, 1417.
 $C_6H_5O_2NS$ 4:6-Diaminophenol-*o*-sulphonic acid (KING), 1419.
 $C_6H_{12}O_2I_2Te_2$ Di-iodohexamethyltritellurionium dioxide (VERNON), 690.

6 V

- $C_6H_5O_2NSAs$ 3-Amino-4-hydroxy-5-sulphino phenylarsinic acid (KING), 1113.
 3-Amino-4-hydroxy-5-sulphophenylarsenious acid (KING), 1420.
 $C_6H_5O_2NSAs$ 3-Amino-4-hydroxy-5-sulphophenylarsinic acid (KING), 1114.

C₇ Group.

- C_7H_8 Toluene, sulphonation of, with chlorosulphonic acid (HARDING), 1261.

7 II

- C_7H_6O Benzaldehyde, condensation of *m*-dimethylaminophenol with (KRISHNA and POPE), 286.
 $C_7H_6O_2$ Salicylaldehyde, additive compounds of 4'-dimethylamino-2-hydroxy-distyryl ketone with (HEILBRON and BUCK), 1512.
 $C_7H_6O_3$ Gallic acid, condensation of chloral with (ALIMCHANDANI and MEDURUM), 201.
 $C_7H_5Cl_2$ *m*-Chlorobenzyl chloride (KENNER and WITHAM), 1460.
 $C_7H_6O_2$ Dimethylpyrone, action of iodine and barium hydroxide on (COLLIE and REILLY), 1550.
 $C_7H_6O_3$ Anhydro-acid from methanetriacetic acid (INGOLD), 353.
 $C_7H_8N_2$ 1:1-Dimethylcyclopropane-2:3-dicarboxylonitrile (BIRCH, GOUGH, and KON), 1322.
 $C_7H_{10}O_4$ *cis*- and *trans*-1:1-Dimethylcyclopropane-2:3-dicarboxylic acids (BIRCH, GOUGH, and KON), 1322.

- $C_4H_6O_4$ Methanetriacetic acid, preparation of (INGOLD), 352.
 $C_7H_{12}O_4$ Diethyl malonate, sodium derivative, condensations of $\alpha\beta$ -unsaturated esters with (INGOLD and POWELL), 1976.

7 III

- $C_7H_5O_4N_3$ Nitro-3-keto-1:3-dihydroindazoles, and their sodium salts (KENNER and WITHAM), 1055.
 $C_7H_5O_4N_3$ 2:4-Dinitro-*m*-tolylazoimide (BRADY and BOWMAN), 898.
 $C_7H_5O_4N_3$ 2:4:6-Trinitrotoluene, additive compound of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1511.
 $C_7H_5O_4N_3$ Trinitrophenylmethylnitroamine (*tetryl*), thermal decomposition of (HINSHELWOOD), 722.
 $C_7H_5O_4N_3$ Trinitrohydroxyphenylmethylnitroamine, thermal decomposition of (HINSHELWOOD), 722.
 $C_7H_5O_4N_4$ 4-Nitro-1-hydroxymethyl-1:2:3-benzotriazoles (BRADY and BOWMAN), 898.
 $C_7H_5O_4N_3$ 2:4-Dinitrotoluene, additive compound of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1511.
 Dinitrotoluenes, partial reduction of (BURTON and KENNER), 1047.
 $C_7H_5ON_3$ 5-Amino-3-keto-1:3-dihydroindazole, and its hydrochloride (KENNER and WITHAM), 1056.
 $C_7H_5O_4N_3$ Nitroformaldehydophenylhydrazone, tautomerism of (SMC-WICK and EWBANK), 491.
 $C_7H_5O_4I$ Substance and its salts, from dimethylpyrone, barium hydroxide, and iodine (COLLIE and REILLY), 1553.
 $C_7H_5NS_2$ Phenylthiocarbamic acid, hydrazine salt (LOSANITCH), 765.
 $C_7H_4Cl_2Bi$ *p*-Tolyldichlorobismuthine (CHALLENGER and ALLPRESS), 917.
 $C_7H_5O_4N_2$ 2-Nitro-*m*-toluidine (BURTON and KENNER), 1052.
 $C_7H_5O_4N_4$ Dinitrotolylhydrazines (BRADY and BOWMAN), 894.
 $C_7H_4O_4Br_2$ *cis*-1:3-Dibromocyclopentane-1:3-dicarboxylic acid (PERKIN and SCARBOROUGH), 1407.
 $C_7H_4N_2S_2$ Phenylthiocarbazine acid, hydrazine salt (LOSANITCH), 765.
 $C_7H_5O_4N$ Caronimide (BIRCH, GOUGH, and KON), 1322.
 $C_7H_4N_2Cl$ 2-Chloro-3:4-tolylenediamine (MORGAN and GLOVER), 1706.
 $C_7H_5ON_2$ *m*-Methoxyphenylhydrazine (KERMACK, PERKIN, and ROBISON), 1640.
 $C_7H_{10}O_4N_3$ 4-Acetylamino-3:5-dimethylisooxazole (MORGAN and BURGESS), 701.
 $C_7H_5O_4Br_2$ Methyl $\alpha\alpha'$ -dibromoglutarate (INGOLD), 317.
 $C_7H_{10}NI$ Ethylpyridinium iodide, mercuri-iodide of, and its crystallography (PORTER), 1770.
 Methyl- α -picolinium iodide, mercuri-iodide of, and its crystallography (PORTER), 1772.
 $C_7H_{11}O_4N_2$ *dl*- α -Methylamino- β -glyoxaline-4-propionic acid, and its salts (FARGHER and PYM), 736.
 $C_7H_{11}ON$ Ethyl α -carbamylcrotonate (GUPTA), 303.
 $C_7H_{10}O_4N_2$ Glycylcholine, and its salts (DUDLEY), 1256.

7 IV

- $C_7H_5O_2N_2Cl$ 3-Chloro-5-nitroindazole (KENNER and WITHAM), 1057.
 $C_7H_5O_2NCl$ α -Chlorodinitrotoluenes (MORGAN and JONES), 187.
 $C_7H_5O_2Cl_2S$ 2:6-Dichloro-*p*-toluenesulphonyl chloride (DAVIES), 872.
 $C_7H_5O_2N_2Cl$ 3-Chloro-2:4-dinitrotoluene (BRADY and BOWMAN), 897.
 α -Chlorodinitrotoluenes (MORGAN and CHALLENGER), 1537; (MORGAN and GLOVER), 1700.

- $C_7H_5O_2NI$ 3-Iodo-2,4-dinitrotoluene (BRADY and BOWMAN), 897.
 $C_7H_5ON_2Cl$ 4-Chloro-1-hydroxy-5-methyl-1:2:3-benzotriazole, and its hydrazine salt (MORGAN and GLOVER), 1705.
 C_7H_5ONCl *p*-Nitrobenzyl chloride, condensation of nitroso-compounds with (BARROW and GRIFFITHS), 212.
 $C_7H_5OCl_2S$ 2-Chloro-*p*-toluenesulphonyl chloride, preparation and nitration of (DAVIES), 860.
 6-Chloro-*o*-toluenesulphonyl chloride (DAVIES), 878.
 C_7H_5ONCl 2-Chloro-5-nitro-*p*-cresol, and its salts (DAVIES), 866.
 $C_7H_5OCl_2S$ 2,6-Dichloro-*p*-toluenesulphonic acid, and its salts (DAVIES), 872.
 $C_7H_5O_2N_2Cl$ 2-Chloro-3,5-dinitro-*p*-toluidine (DAVIES), 868.
 C_7H_5NClBr 6-Chloro-2,4-dibromo-*m*-toluidine (DAVIES), 866.
 $C_7H_5O_2N_2Cl$ 2- and 6-Chloro-4-nitro-*m*-toluidines (MORGAN, CHALLENGER, and JONES), 1544; (MORGAN and GLOVER), 1704.
 C_7H_5OClS *o*- and *p*-Toluenesulphonyl chlorides, melting points of mixtures of (HARDING), 260.
 C_7H_5OClS 6-Chloro-*o*-toluenesulphonic acid, and its salts (DAVIES), 879.
 $C_7H_5OCl_3Te$ Tellurium *O*-ethylacetylacetone trichloride (MORGAN and DREW), 613.
 $C_7H_5O_2N_2Br_2$ Dibromomalondithethylamide (BACKES, WEST, and WHITELEY), 367.
 $C_7H_5O_2N_2Br$ Bromomalondithethylamide (BACKES, WEST, and WHITELEY), 366.

7 V

- C_7H_5ONClS 6-Chloro-*o*-benzoic acid (DAVIES), 880.
 C_7H_5ONClS Chloronitro-*o*- and *p*-toluenesulphonyl chlorides (DAVIES), 864, 870, 884.
 C_7H_5ONClS Chloronitro-*o*- and *p*-toluenesulphonic acids, and their salts (DAVIES), 865, 870, 884.
 C_7H_5ONClS 2,6-Dichloro-*p*-toluenesulphonamide (DAVIES), 872.
 C_7H_5ONClS Chloronitro-*o*- and *p*-toluenesulphonamides (DAVIES), 865, 870, 884.
 C_7H_5ONClS 6-Chloro-*o*-toluenesulphonamide (DAVIES), 879.
 C_7H_5ONClS 6-Chloro-*m*-toluidine-4-sulphonic acid (DAVIES), 865.

C₈ Group.

- C_8H_{16} 1:1-Dimethylcyclohexane from methylheptenone (CROSSLEY and RENOUF), 271.

8 II

- $C_8H_6O_4$ Carboxymethanetriacetic dianhydride (INGOLD and POWELL), 1873.
 C_8H_6O Anisaldehyde, additive compound of 4'-dimethylamino-2-hydroxy-distyryl ketone with (HEILBRON and BUCK), 1512.
 Phenyl acetate, action of sodium on (PERKIN), 1284.
 C_8H_6O Cresotic acids, condensation of chloral with (ALIMCHANDANI and MELDRUM), 201.
 $C_8H_6N_2$ 6-Amino-5-methylindazole (PEARMAN), 718.
 $C_8H_{10}O_6$ Lactone of β -hydroxy-8-methylbutane- γ -tricarboxylic acid (BIRCH, GOUGH, and KON), 1323.
cis- and *trans*-*cyclo*Pentane-1:2:3-tricarboxylic acids, synthesis and resolution of (PERKIN and ROBINSON), 1392.
 $C_8H_{10}O_6$ *n*-Butane- $\alpha\beta\gamma\delta$ -tetracarboxylic acid (INGOLD), 348.

- $C_8H_{10}O_8$ Carboxymethanetriacetic acid, and its salts (INGOLD and POWELL), 1869.
 $C_8H_{11}As$ Phenyltrimethylarsine, additive compounds of, with arsenic and phosphorus iodides, and metallic iodides (BURROWS and TURNER), 1449.
 $C_8H_{12}O$ *cyclopentenyl*acetone (KON), 823.
 $C_8H_{12}O_2$ Ethyl *cyclopentanone*-3-carboxylate (INGOLD and THORPE), 500.
 $C_8H_{12}O_2$ *cyclopentane*-1-acetic-1-carboxylic acid (NORRIS and THORPE), 1208.
 $C_8H_{12}O_4$ α -Methylmethanetriacetic acid (INGOLD and PERREN), 1599, 1868.
 $C_8H_{14}O$ Ketone, from $\beta\beta$ -diethylglutaric acid (KON), 821.
 $C_8H_{14}O$ *cyclopentyl*acetone (KON), 824.
 $C_8H_{16}O$ Ketone, from reduction of ketone $C_8H_{14}O$ (KON), 822.
 $C_8H_{16}S_2$ Tetramethyldiethylene disulphide (POPE and SMITH), 400.

8 III

- $C_6H_4O_2N_2$ 6-Nitro-3:4-methylenedioxybenzonitrile (KEFFLER), 1478.
 $C_6H_4O_2Cl$ 4-Chlorophthalic acid, preparation of (MOORE, MARRACK, and PROUD), 1788.
 $C_6H_5NCl_2$ 3-Chloro-2-cyanobenzyl chloride (KENNER and WITHAM), 1458.
 C_6H_5OS 3-Oxy(1)thionaphthen, preparation and derivatives of (SMILES and McCLELLAND), 1810.
 C_6H_5ON Hydantoin from 6-carbamido-*m*-hydroxybenzoic acid (FROELICHER and COHEN), 1432.
 C_6H_5NCl 3-Chloro-*o*-toluonitrile (KENNER and WITHAM), 1458.
 C_6H_5OBr ω -Bromoacetophenone, velocity of reaction of aniline and (COX), 145.
 C_6H_5OCl 3-Chloro-*o*-toluic acid (KENNER and WITHAM), 1458.
 $C_6H_5O_2N_2$ 2:4:6-Trinitrotolylmethylnitrosoamine (BRADY and GIBSON), 104.
 $C_6H_5O_2N_2$ 2:4:6-Trinitrotolylmethylnitroamine (BRADY and GIBSON), 88.
 $C_6H_5N_2Cl$ 5-Chloro-6-methylbenzimidazole (MORGAN and CHALLENGER), 1542.
 $C_6H_5O_2N_2$ 2:3-Dicyano-1:1-dimethyl*cyclopropane*-2-carboxylic acid (BIRCH, GOUGH, and KON), 1320.
 $C_6H_5O_2S$ *m*-Methylthiolbenzoic acid (SMILES and STEWART), 1797.
 $C_6H_5O_2N_2$ *o*-Carbamidobenzoic acid, preparation of (SCOTT and COHEN), 664.
 Nitroacetanilides, solubility and volatility of (SIDGWICK and RUBIK), 1013.
 $C_6H_5O_2N_2$ Carbamido-*m*-hydroxybenzoic acids (FROELICHER and COHEN), 1430.
 $C_6H_5O_2N_2$ Formaldehyde-2:4-dinitro-*m*-tolylhydrazone (BRADY and BOWMAN), 899.
 $C_6H_5O_2S$ *m*-Methylsulphonebenzoic acid (SMILES and STEWART), 1797.
 $C_6H_5O_2N_2$ Dinitrotolylmethylnitrosoamines (BRADY and GIBSON), 103.
 $C_6H_5O_2N_2$ 2:4-Dinitrophenyl- β -hydroxyethyl ether (FAIRBOURNE and TOMS), 2077.
 $C_6H_5O_2N_2$ Dinitrotolylmethylnitroamines (BRADY and GIBSON), 103.
 $C_6H_5N_2Cl$ 6-Chloro-2-methyl-2:3-tolylenediazoimine (MORGAN and JONES), 191.
 $C_6H_5O_2N_2$ 2:3-Dicyano-1:1-dimethyl*cyclopropane*-2-carboxylamide (BIRCH, GOUGH, and KON), 1320.
 $C_6H_5O_2N$ Amino-*m*-methoxybenzoic acids (FROELICHER and COHEN), 1430.
 $C_6H_5O_2N$ Acetyl-*p*-nitrophenylhydrazine (MORGAN and DREW), 622.
 $C_6H_5O_2N_2$ Dinitromethyltolnidines (BRADY and GIBSON), 101.

FORMULA INDEX.

8 III-8 V

- $C_6H_{10}ON$, 6-Amino-2:3-dihydro-1:4-benzisoxazine (FAIRBOURNE and TOMS), 2078.
 $C_8H_{10}O_2N_2$ *p*-Aminophenylaminoacetic acid, hydrochlorides of (GRANT and PYMAN), 1901.
 $C_6H_{11}ON$ *m*-Dimethylaminophenol, condensation of benzaldehyde with (KRISHNA and POPE), 286.
 $C_8H_{11}O_2N_2$ *cyclo*Pentanone-3:4-dicarboxylic acid semicarbazone (INGOLD), 350.
 $C_6H_{12}N_2Cl$ 6-Chloro-2-methyl-2:3-tolylenediamine (MORGAN and JONES), 191.
 6-Chloro-3-N-methyl-3:4-tolylenediamine (MORGAN and CHALLENGER), 1542.
 $C_6H_{12}NI$ Ethyl- α -picolinium iodide, mercuri-iodide of, and its crystallography (PORTER), 1772.
 Propylpyridinium iodide, mercuri-iodide of, and its crystallography (PORTER), 1771.
 $C_6H_{13}O_2N$ Ethyl cyanomethylbutyrate (INGOLD), 339.
 $C_8H_{15}ON$ Oxime of ketone $C_8H_{14}O$ (KON), 822.
 $C_8H_{14}Cl_2S$ $\beta\beta'$ -Dichlorodi-*sec*-butyl sulphide (POPE and SMITH), 399.
 $C_8H_{17}ON$ 1-Ethoxymethylpiperidine, preparation of (MCLEOD and ROBINSON), 1474.

8 IV

- $C_6H_5O_2N_2Cl$ Substance, from sodium hypochlorite and 2:4-diketo-1:2:3:4-tetrahydroquinazoline (SCOTT and COHEN), 665.
 C_8H_9ONCl Methyl 2-chloro-3-nitrobenzoate (KENNER and STUBBINGS), 598.
 C_8H_9ONCl Chloroacetanilides, solubility and volatility of (SIDGWICK and RUSIE), 1013.
 3-Chloro-*o*-toluamide (KENNER and WITHAM), 1458.
 $C_8H_9O_2N_2Cl$ Chloronitrotolylmethylnitrosoamines (MORGAN and JONES), 189.
 $C_8H_9O_2N_2S$ 2:4-Dinitrophenyl β -hydroxyethyl sulphide (BENNETT and WHINCOP), 1864.
 $C_8H_9O_2N_2Cl$ Chloronitro-N-methyltoluidines (MORGAN and JONES), 189.
 $C_8H_9O_2ClBr$ 4-Chloro-4-bromo-1:1-dimethylcyclohexane-3:5-dione (NORRIS and THORPE), 1210.
 $C_8H_9O_2NTl$ Thalliumdimethyl nitrophenoxides (GODDARD), 1312.
 $C_8H_9O_2NTl$ Thalliumdimethyl 4:6-dinitro-2-aminophenoxide (GODDARD), 1313.
 $C_8H_{10}O_2N_2S$ N-Sulphidobisbutyramide (NAIK), 1168.
 $C_8H_{10}O_2Cl_2S$ $\beta\beta'$ -Dichloro-di-*sec*-butylsulphone (POPE and SMITH), 399.
 $C_8H_{10}O_2S_2$ Sulphidobis- β -hydroxydiethyl sulphide (BENNETT and WHINCOP), 1863.
 $C_8H_{10}O_2N_2Co$ *cis*-Maleatodiethylenediaminecobaltic hydroxide, salts of (DUFF), 388.
 $C_8H_{10}O_2N_2Co$ *cis*-Succinatodiethylenediaminecobaltic hydroxide, salts of (DUFF), 387.
 $C_8H_{10}O_2N_2Co$ *cis*-Mesotartratodiethylenediaminecobaltic hydroxide, salts of (DUFF), 388.

8 V

- $C_8H_9O_2N_2ClS$ 2:4-Dinitrophenyl β -chloroethyl sulphide (BENNETT and WHINCOP), 1864.
 $C_8H_9O_2N_2BrS$ 2:4-Dinitrophenyl β -bromoethyl sulphide (BENNETT and WHINCOP), 1864.

- $C_8H_8O_4N_2ClS$ 2:4-Dinitrophenyl β -chloroethyl sulphoxide (BENNETT and WHINCOP), 1864.
 $C_8H_8O_4N_2BrS$ 2:4-Dinitrophenyl β -bromoethyl sulphoxide (BENNETT and WHINCOP), 1864.
 $C_8H_{18}O_4N_4BrCo$ *cis*-Maleatodiethylenediaminecobaltic bromide (+ $2H_2O$) (DUFF), 388.
 $C_8H_{18}O_4N_4Br_2Co$ *cis*-Dibromosuccinatodiethylenediaminecobaltic bromide (+ $2H_2O$) (DUFF), 389.
 $C_8H_{18}O_4N_4Br_2Co$ *cis*-Dibromosuccinatodiethylenediaminecobaltic hydroxide (DUFF), 389.
 $C_8H_{20}O_4N_4BrCo$ *cis*-Succinatodiethylenediaminecobaltic bromide (+ $2H_2O$) (DUFF), 387.
 $C_8H_{20}O_6N_4BrCo$ *cis*-Mesotartaratodiethylenediaminecobaltic bromide (+ $2H_2O$) (DUFF), 388.

C₉ Group.

- $C_9H_9N_2$ 4-Phenylglyoxaline, and its salts (GRANT and PYMAN), 1896.
 $C_9H_{10}O_3$ Atrolactic acid, resolution of (WREN and WRIGHT), 798.
 $C_9H_{10}O_3$ α -Hydroxy- β -phenylpropionic acid (WREN and WRIGHT), 798.
 $C_9H_{10}O_4$ Phenylglyceric acid, action of fused potassium hydroxide on (LE SUEUR and WOOD), 1697.
 $C_9H_{10}N_4$ 5-Amino-4-*p*-aminophenylglyoxaline, dihydrochloride of (GRANT and PYMAN), 1900.
 $C_9H_{12}O_2$ *cyclo*Hexane-1-acetic-1-carboxylic anhydride (NORRIS and THORPE), 1206.
 $C_9H_{12}O_2$ Acid, from oxidation of *cyclo*hexane-1:1-diacetic acid (INGOLD and POWELL), 1870.
 $C_9H_{14}O_4$ *cyclo*Hexane-1-acetic-1-carboxylic acid, and its silver salt (NORRIS and THORPE), 1206.
 $C_9H_{14}O_7$ Trimethyl saccharolactonic acid (IRVINE and OLDHAM), 1757.
 $C_9H_{14}O_8$ Ethyl α -hydroxyglutarate (INGOLD), 318.
 Trimethyl β -glucosan, preparation of (IRVINE and OLDHAM), 1754.

9 III

- $C_9H_5O_3Cl_3$ 3:4:5-Trihydroxy-2-trichloromethylphthalide (AJIMCEAS-DANI and MELDRUM), 208.
 $C_9H_6O_4N_2$ Diketotetrahydroquinazolinecarboxylic acid, and its sodium salt (SCOTT and COHEN), 667.
 $C_9H_6O_4N_4$ 5-Nitro-4-*p*-nitrophenylglyoxaline, and its nitrate (GRANT and PYMAN), 1898.
 C_9H_7OCl Chloro-1-hydrindones (KENNER and WITHAM), 1459.
 $C_9H_8O_2N_2$ 4-Nitrophenylglyoxalines, and their salts (GRANT and PYMAN), 1897.
 $C_9H_8O_2N_2$ 5-Nitro-4-*p*-hydroxyphenylglyoxaline (GRANT and PYMAN), 1902.
 $C_9H_8O_4N_2$ Acetyl derivative of 5-nitro-3-keto-1:3-dihydroindazole (KENNER and WITHAM), 1055.
 $C_9H_8O_4N_4$ 5-Nitro-4-*p*-aminophenylglyoxaline, and its dihydrochloride (GRANT and PYMAN), 1901.
 $C_9H_8O_4N_2$ 6-Nitroveratronitrile (KEFFLER), 1479.
 $C_9H_8O_4N_2$ 3-Carbamidophthalic acid (+ $\frac{1}{2}H_2O$) (SCOTT and COHEN), 665.
 $C_9H_8N_2S$ 2-Thiol-4-phenylglyoxaline, and its salts (GRANT and PYMAN), 1895.
 C_9H_9ON 6-Methoxyindole (KERMACK, PERKIN, and ROBINSON), 1632.

- $\text{H}_2\text{O}_2\text{Cl}$ 5-Chloro-2,4-dimethylbenzoic acid (MORGAN and HICKINBOTTOM), 1891.
 β -*m*-Chlorophenylpropionic acid (KENNER and WITAM), 1460.
 $\text{H}_2\text{O}_2\text{Br}$ 5-Bromo-2-methoxyphenylacetaldehyde (READ and ANDREWS), 1785.
 $\text{H}_2\text{O}_2\text{Cl}$ Cinnamic acid chlorohydrin, preparation of (READ and ANDREWS), 1777.
 $\text{H}_2\text{O}_2\text{Br}$ Cinnamic acid bromohydrin, and its salts (READ and ANDREWS), 1778.
 $\text{H}_2\text{O}_2\text{I}$ Acetyl derivative of substance $\text{C}_7\text{H}_5\text{O}_2\text{I}$ (COLLIE and REILLY), 1554.
 $\text{H}_2\text{O}_2\text{N}$ *o*-Nitro-*p*-methoxyphenylacetic acid (KERMAK, PERKIN, and ROBINSON), 1631.
 3-Nitro-2-methoxy-*p*-toluic acid (SIMONSEN and RAU), 1342.
 $\text{H}_2\text{O}_2\text{N}_2$ 4,5-Dinitroaceto-*o*-toluidide (MORGAN and GLOVER), 1703.
 $\text{H}_2\text{O}_2\text{Co}$ Cobaltimalonic acid, potassium salt (THOMAS), 1140.
 $\text{H}_2\text{N}_2\text{Cl}$ 5-Chloro-1,6-dimethylbenzimidazole (MORGAN and CHALLENGER), 1541.
 $\text{H}_2\text{O}_2\text{N}$ Malonphenylamide ($+\frac{1}{2}\text{H}_2\text{O}$) (BACKES, WEST, and WHITELEY), 372.
 $\text{H}_2\text{O}_2\text{N}_2$ 2-Nitroaceto-*m*-toluidide (BURTON and KENNER), 1052.
 $\text{H}_2\text{O}_2\text{N}$ Carbamido-*m*-methoxybenzoic acids (FROELICHER and COHEN), 1430.
 3-Nitro-2-methoxy-*p*-toluamide (SIMONSEN and RAU), 1342.
 $\text{H}_2\text{O}_2\text{N}_2$ Acetaldehyde-2,4-dinitro-*m*-tolylhydrazones (BRADY and BOWMAN), 899.
 $\text{H}_{10}\text{O}_2\text{N}_2$ $\alpha\beta$ -Dicyano- γ -hydroxy- γ -methylbutane- $\alpha\beta$ -dicarboxylic acid, and its silver salt (BIRCH, GOUGH, and KON), 1323.
 $\text{H}_{10}\text{O}_2\text{N}_2$ Acetyl-2,4-dinitro-*m*-tolylhydrazine (BRADY and BOWMAN), 897.
 H_{11}ON *p*-Dimethylaminobenzaldehyde, additive compound of, with 4'-dimethylamino-2-hydroxydistyryl ketone (HEILBRON and BUCK), 1507.
 $\text{H}_{11}\text{O}_2\text{N}_2$ *p*-Acetylamino-nitrosomethyl-aniline (PERKIN and PLANT), 1835.
 $\text{H}_{11}\text{O}_2\text{N}$ 8-Amino-2-methoxy-*p*-toluic acid, and its salts (SIMONSEN and RAU), 1343.
 β -Hydroxy- β -3,4-methylenedioxyphenylethylamine, and its salts (MASON), 1077.
 $\text{H}_{11}\text{O}_2\text{N}_2$ Dinitrodimethyltoluidines (BRADY and GIBSON), 102.
 4-Nitro-2-carbethoxyphenylhydrazine (KENNER and WITAM), 1055.
 $\text{H}_{12}\text{O}_2\text{Br}$ Methyl *cis*-1,3-dibromocyclopentane-1,3-dicarboxylate (PERKIN and SCARBOROUGH), 1407.
 H_{13}ON *p*-Acetylamino-phenylmethylhydrazine (PERKIN and PLANT), 1835.
 $\text{H}_{13}\text{O}_2\text{Br}$ Ethyl α -bromoglutaconate (FARMER and INGOLD), 2013.
 $\text{H}_{13}\text{O}_2\text{Br}_2$ Ethyl $\alpha\alpha'$ -dibromoglutarate (INGOLD), 318.
 H_{13}NI Propyl- α -picolinium iodide, mercuri-iodide of, and its crystallography (PORTER), 1773.
 H_{13}ON Semicarbazone of cyclopentenylacetone (KON), 823.
 H_{13}OAs Phenyltrimethylarsonium hydroxide, cadmi-iodide of (BURROWS and TURNER), 1449.
 $\text{H}_{13}\text{O}_2\text{Br}$ Ethyl α -bromoglutarate (INGOLD), 316.
 H_{13}NI Phenylmethylethylazonium iodide, additive compound of thio-carbamide and (SINGH and LAL), 211.
 H_{14}ON Semicarbazone of ketone $\text{C}_8\text{H}_{14}\text{O}$ (KON), 821.
 Semicarbazone of cyclopentylacetone (KON), 824.

- $C_8H_{15}O_2N_2$ Malondi-*n*-propylamide (BACKES, WEST, and WHITELEY), 367.
 $C_8H_{15}ON_2$ Semicarbazone of ketone $C_8H_{14}O$ (KON), 822.

9 IV

- C_8H_5ONCl 5-Chloroisoxonitroso-1-hydrindone (KENNER and WITHAM), 1461.
 $C_8H_5O_2N_2Br_2$ Dibromomalondibromophenylamide (BACKES, WEST, and WHITELEY), 373.
 $C_8H_5O_2N_2Br_2$ Dibromomalonbromophenylamide (BACKES, WEST, and WHITELEY), 373.
 C_8H_5ONCl Oxime of 5-chloro-1-hydrindone (KENNER and WITHAM), 1461.
 $C_8H_5O_2N_2Br_2$ Bromomalonbromophenylamide (BACKES, WEST, and WHITELEY), 373.
 Malondibromophenylamide (BACKES, WEST, and WHITELEY), 373.
 $C_8H_5O_2N_2S_2$ Dithiomesoxomomophenylamide (NAIK), 1237.
 C_8H_5ONCl Ethyl 2-chloro-3-nitrobenzoate (KENNER and STUBBINGS), 598.
 Ethyl chloronitrobenzoates, condensation of, with hydrazines (KENNER and WITHAM), 1053.
 C_8H_5ONI Ethyl 2-iodo-3-nitrobenzoate (KENNER and STUBBINGS), 599.
 $C_8H_5O_2N_2Br_2$ 2,4-Dinitrophenyl β -dibromopropyl ether (FAIRCLOUGH and TOMS), 1038.
 $C_8H_5O_2N_2Cl$ 2-Chloro-3,5-dinitroaceto-*p*-toluidide (DAVIES), 868.
 $C_8H_5O_2N_2Cl$ Formate of 5-chloro-6-methylbenziminazole (MORGAN and CHALLENGER), 1542.
 $C_8H_5ON_2S$ ω -Aminoacetophenone thiocyanate (GRANT and PYMAN), 1356.
 $C_8H_{11}ON_2S$ β -Hydroxyethyl phenylthiocarbamate (BENNETT and WHITELEY), 1861.
 $C_8H_5O_2NTl$ Thalliumdimethyl 3-nitro-*o*-tolylloxide (GODDARD), 1314.
 $C_8H_5O_2N_2Br$ Bromomalonyldiurethane (BACKES, WEST, and WHITELEY), 372.
 $C_8H_5O_2N_2Br_2$ Dibromomalondi-*n*-propylamide (BACKES, WEST, and WHITELEY), 368.
 $C_8H_5O_2N_2Br$ Bromomalondi-*n*-propylamide (BACKES, WEST, and WHITELEY), 367.
 $C_8H_{11}O_2N_4Co$ *cis*-Citraconatodiethylenediaminecobaltic hydroxide, hydrogen citraconate of (DUFF), 389.

C₁₀ Group.

- $C_{10}H_{12}$ Tetrahydronaphthalene, preparation of derivatives of (KON and STEVENSON), 87.
 $C_{10}H_{16}$ Hydrocarbon, from *Andropogon Juarancusa* (SIMONSEN), 1649.

10 II

- $C_{10}H_6O$ 3-Methoxy-4-methyl-*o*-phthalic anhydride (SIMONSEN and RAL), 1344.
 $C_{10}H_{12}N$ Quinaldine, synthesis of (MILLS, HARRIS, and LAMBOURNE), 1294.
 $C_{10}H_{10}O$ *ar*-Dihydro-*n*-naphthols (ROWE and LEVIN), 2021.
 $C_{10}H_{10}O_2$ 6-Hydroxy-5-carboxy-*m*-tolylacetic acid, and its silver salt (ALIMCHANDANI and MELDRUM), 209.
 3-Methoxy-4-methyl-*o*-phthalic acid, and its salts (SIMONSEN and RAL), 1345.
m-Opianic acid, and its silver salt (FARGHER and PERKIN), 1739.
 $C_{10}H_{10}N_2$ 6-Aminoquinaldine (HAMER), 1435.
 $C_{10}H_{11}Cl$ 4-Chlorobutenylbenzene (MORGAN and HICKINBOTTOM), 1888.
 $C_{10}H_{13}O_2$ *n*- and *iso*-Eugenols, analysis of mixtures of (McKIE), 777.
 Hydroxyphenyl *n*-propyl ketones (MORGAN and HICKINBOTTOM), 1884.

- $\text{C}_{10}\text{H}_{12}\text{O}_5$ 5-Hydroxy-4-methoxy-*o*-tolyl methyl ketone (FARGHER and PERKIN), 1733.
- $\text{C}_8\text{H}_{12}\text{O}_5$ Ethyl 6-ethoxy-2-pyrone-6-carboxylate (INGOLD and PERREN), 1601.
- $\text{C}_{10}\text{H}_{12}\text{N}_4$ *cyclo*Hexanespirocyclopropane-2:3-dicarboxylonitrile (BIRCH, GOUGH, and KON), 1325.
- 1:4-*cis*oMethylene-6-methyltetrahydroquinoxaline, and its salts (MOORE and DOUBLEDAY), 1172.
- $\text{C}_{10}\text{H}_{12}\text{Cl}$ 4-Chloro-*n*-butylbenzene (MORGAN and HICKINBOTTOM), 1886.
- $\text{C}_{10}\text{H}_{12}\text{As}$ *As*-Methyltetrahydroarsinoline, and its salts (BURROWS and TURNER), 430.
- $\text{C}_{10}\text{H}_{14}\text{O}_2$ *cyclo*Pentanespirocyclohexane-3:5-dione (NORRIS and THORPE), 1207.
- $\text{C}_{10}\text{H}_{14}\text{O}_3$ Hydroxyketodihydroepicampholenic lactone (PERKIN and TITLEY), 1108.
- $\text{C}_{10}\text{H}_{14}\text{O}_4$ Benzoyl glyceride (FAIRBOURNE and TOMS), 1040.
- γ -Lactone of 1-hydroxycyclohexylethane- $\alpha\beta$ -dicarboxylic acid, and its silver salt (BIRCH, GOUGH, and KON), 1326.
- $\text{C}_{10}\text{H}_{15}\text{N}$ Epicampholenonitrile (PERKIN and TITLEY), 1102.
- $\text{C}_{10}\text{H}_{15}\text{O}$ Epicamphor (PERKIN and TITLEY), 1089.
- cyclo*Heptenylacetone (KON), 827.
- Piperitone (READ and SMITH), 779; constitution of (SIMONSEN), 1650.
- $\text{C}_{10}\text{H}_{16}\text{O}_2$ Dihydroepicampholenolactone (PERKIN and TITLEY), 1104.
- Epicampholenic acids (PERKIN and TITLEY), 1108.
- $\text{C}_{10}\text{H}_{16}\text{O}_3$ 1-Hydroxycyclohexylethane- $\alpha\beta$ -dicarboxylic acid, silver salt (BIRCH, GOUGH, and KON), 1327.
- $\text{C}_{10}\text{H}_{17}\text{Cl}$ Hydrochloride of hydrocarbon, $\text{C}_{10}\text{H}_{16}$ (SIMONSEN), 1649.
- $\text{C}_{10}\text{H}_{17}\text{Br}$ Dibromobromide of hydrocarbon, $\text{C}_{10}\text{H}_{16}$ (SIMONSEN), 1650.
- $\text{C}_{10}\text{H}_{17}\text{N}$ *l*-Epicamphylamine (PERKIN and TITLEY), 1105.
- $\text{C}_{10}\text{H}_{18}\text{O}_6$ Trimethyl- β -methylglucoside (IRVINE and OLDHAM), 1758.

10 III

- $\text{C}_{10}\text{H}_6\text{O}_2\text{N}$ 1:2-Naphthaquinone-1-oxime, hexamminocobaltic salt (MORGAN and SMITH), 708.
- $\text{C}_{10}\text{H}_6\text{O}_2\text{N}$ 7-Oxy-1:2-naphthaquinone-1-oxime, pentamminodicobaltic salt (MORGAN and SMITH), 709.
- $\text{C}_{10}\text{H}_6\text{ONa}$ Sodium- β -naphthoxide, velocity of reaction of ethyl iodide and (COX), 149.
- $\text{C}_{10}\text{H}_6\text{O}_2\text{N}$ 7-Hydroxy-1:2-naphthaquinone-1-oxime, cobaltic salt (MORGAN and SMITH), 708.
- $\text{C}_{10}\text{H}_7\text{Br}_2\text{Bi}$ α -Naphthyldibromobismuthine (CHALLENGER and ALLPRESS), 919.
- $\text{C}_{10}\text{H}_7\text{O}_2\text{S}$ 2-Acetyl-3-oxy(1)thionaphthen (SMILES and McCLELLAND), 1814.
- $\text{C}_{10}\text{H}_7\text{O}_4\text{N}_4$ Dinitro-2:3:6:7-dimethylenetetraoxyanthraquinone-diimide (KEFFLER), 1479.
- $\text{C}_{10}\text{H}_7\text{O}_2\text{N}_2$ 2:4-Dinitro-5:8-dihydro- α -naphthol (ROWE and LEVIN), 2028.
- $\text{C}_{10}\text{H}_7\text{O}_2\text{N}$ Scatole-2-carboxylic acid (KERMACK, PERKIN, and ROBINSON), 1634.
- $\text{C}_{10}\text{H}_7\text{O}_2\text{N}$ 2-Methoxy-3-cyano-*p*-toluic acid, and its silver salt (SIMONSEN and RAU), 1344.
- 6-Methoxyindole-2-carboxylic acid (KERMACK, PERKIN, and ROBINSON), 1632.
- 3-Methoxy-4-methyl-*o*-phthalimide (SIMONSEN and RAU), 1345.
- Nitrodihydro- α -naphthols (ROWE and LEVIN), 2026.
- $\text{C}_{10}\text{H}_7\text{O}_2\text{Cl}$ *m*-Chlorobenzylmalonic acid (KENNER and WITHAM), 1460.

- $C_{10}H_9O_2N$ *o*-Nitro-*p*-methoxyphenylpyruvic acid (KERMACK, PERKIN, and ROBINSON), 1630.
- $C_{10}H_9O_2Cl_2$ 4-Hydroxy-5-*ββ*-dichloroethyl-*m*-toluic acid, and its calcium salt (ALIMCHANDANI and MELDRUM), 208.
- $C_{10}H_{10}O_2N_2$ 2:3:6:7-Dimethylenetetraoxyanthraquinonedi-imide (KEFFLER), 1479.
- $C_{10}H_{10}O_4Br_2$ *α,β*-Dibromo-*β*-hydroxy-2-methoxy-*β*-phenylpropionic acid, and its brucine salt (READ and ANDREWS), 1783.
- $C_{10}H_{11}ON$ 6-Methoxy-3-methylindole (KERMACK, PERKIN, and ROBINSON), 1640.
- $C_{10}H_{11}OCl$ Chlorophenyl *n*-propyl ketones (MORGAN and HICKINBOTTOM), 1885.
- $C_{10}H_{11}O_2N$ 3-Methoxy-4-ethoxybenzonitrile (KEFFLER), 1481.
- $C_{10}H_{11}O_2N$ Nitrophenyl *n*-propyl ketones (MORGAN and HICKINBOTTOM), 1882.
- $C_{10}H_{11}ON$ 3-Nitro-4-hydroxyphenyl *n*-propyl ketone (MORGAN and HICKINBOTTOM), 1888.
- $C_{10}H_{11}ON$ 4-Carbethoxyamino-*m*-hydroxybenzoic acid (FROELICHER and COHEN), 1430.
- $C_{10}H_{11}ClBr_2$ 4-Chloro-*αβ*-dibromo-*n*-butylbenzene (MORGAN and HICKINBOTTOM), 1887.
- $C_{10}H_{12}O_2Br_2$ *cyclo*Pentanespiro-4:4-dibromocyclohexane-3:5-dione (NORRIS and THORPE), 1210.
- $C_{10}H_{12}O_2S_2$ *cyclo*Pentanespiro-3:5-diketo-4-dithiocyclohexane (NAIR), 1240.
- $C_{10}H_{12}O_2N_2$ Acetyl derivative of 3-nitro-2-methoxy-*p*-toluidine (SIMONSEN and RAU), 1342.
- $C_{10}H_{12}O_2N_4$ Acetonedinitrotolylhydrazones (BRADY and BOWMAN), 399.
- $C_{10}H_{12}O_2N_4$ *n*-Propaldehyde-2:4-dinitro-*m*-tolylhydrazone (BRADY and BOWMAN), 399.
- $C_{10}H_{13}ON$ Aminophenyl *n*-propyl ketones, and their salts (MORGAN and HICKINBOTTOM), 1883.
- $C_{10}H_{13}O_2Br$ *cyclo*Pentanespiro-4-bromocyclohexane-3:5-dione (NORRIS and THORPE), 1210.
- $C_{10}H_{13}O_2N_3$ 4-Diazoamino-3:5-dimethylisoxazole (MORGAN and BURGESS), 1547.
- $C_{10}H_{13}O_2N_3$ 3:5-Dimethylisoxazole-4-azo-acetylacetone (MORGAN and BURGESS), 1546.
- $C_{10}H_{14}ON_2$ Acetyl-4:6-diamino-*m*-xylene (PEARMAN), 718.
- $C_{10}H_{14}ClAs$ *γ*-Phenylpropylmethylchloroarsine (BURROWS and TURNER), 430.
- $C_{10}H_{14}BrAs$ *γ*-Phenylpropylmethylbromoarsine (BURROWS and TURNER), 430.
- $C_{10}H_{14}O_4N$ Ethyl *α*-cyanopropane-*βγ*-dicarboxylate (INGOLD), 940.
- $C_{10}H_{14}O_4N_3$ 3-Nitrophenyl *n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1882.
- $C_{10}H_{14}O_4Br_2$ Ethyl dibromoadipates (INGOLD), 962.
- $C_{10}H_{14}O_4I_2$ Ethyl diiodoadipates (INGOLD), 963.
- $C_{10}H_{14}ON$ Piperitoneoximes (READ and SMITH), 784; (SIMONSEN), 1651.
- $C_{10}H_{14}OAS$ Phenyl dimethylethylarsonium hydroxide, salts of (BURROWS and TURNER), 1450.
- $C_{10}H_{17}O_2Cl$ Pinene chlorohydrins (HENDERSON and MARSH), 1497.
- $C_{10}H_{17}O_2Cl$ Ethyl *α*-chloroadipate (INGOLD), 961.
- $C_{10}H_{17}O_2Br$ Ethyl *α*-bromoadipate (INGOLD), 961.
- $C_{10}H_{17}O_4Cl_2$ 1:2-Dichloromenthane-6:8-diol, or Sobrerol dichloride (HENDERSON and MARSH), 1496.
- Pinene dichlorohydrins (HENDERSON and MARSH), 1495.

- $C_{10}H_{10}O_2N_2$ *dl*-Piperitonehydroxylamino-oxime (READ and SMITH), 783.
 $C_{10}H_{11}ON$ 1-*iso*Butoxymethylpiperidine, preparation of (McLEOD and ROBINS-SON), 1474.

10 IV

- $C_{10}H_8O_4NS_2$ 8-Oxy-1:2-naphthaquinone-2-oxime-3:6-disulphonic acid, pentamminocobaltic salts (MORGAN and SMITH), 713.
 $C_{10}H_8O_4NS$ 1:2-Naphthaquinone-2-oxime-4-sulphonic acid, cobaltic and β -naphthylamine salts (MORGAN and SMITH), 710.
 $C_{10}H_8O_4NS_2$ 8-Hydroxy-1:2-naphthaquinone-2-oxime-3:6-disulphonic acid, cobaltic and β -naphthylamine salts (MORGAN and SMITH), 713.
 $C_{10}H_8O_4N_2I$ 6-Nitroquinoline methiodide (HAMER), 1435.
 $C_{10}H_{10}ON_2Cl$ Chloro-1-hydrindone semicarbazones (KENNER and WITHAM), 1459.
 $C_{10}H_{10}O_2N_2S_2$ Dithiomesoxomono-*p*-toluidide (NAIK), 1237.
 $C_{10}H_9ON_2Cl$ 4-Chloro-3-nitrophenyl *n*-propyl ketone (MORGAN and HICKINBOTTOM), 1887.
 $C_{10}H_{10}ONCl$ 4-Chloro-3-aminophenyl *n*-propyl ketone, and its hydrochloride (MORGAN and HICKINBOTTOM), 1888.
 $C_{10}H_9O_2N_2Br$ 5-Bromo-2-methoxyphenylacetaldehyde semicarbazone (READ and ANDREWS), 1785.
 $C_{10}H_{12}O_2N_2Tl$ Thalliumdiethyl 2:4:6-trinitrophenoxide (GODDARD), 1313.
 $C_{10}H_{10}O_2N_2Tl$ Thalliumdiethyl 2:4-dinitrophenoxide (GODDARD), 1313.
 $C_{10}H_{11}O_2NTl$ Thalliumdiethyl nitrophenoxides (GODDARD), 1312.
 $C_{10}H_{11}O_2N_2Tl$ Thalliumdiethyl 4:6-dinitro-2-aminophenoxide (GODDARD), 1313.
 $C_{10}H_{11}ONBr_2$ Dibromopiperitoneoxime (SIMONSEN), 1652.
 $C_{10}H_{10}ONI$ Substance, from eseroline methiodide, methyl iodide, and sodium ethoxide (STEDMAN), 892.

10 VI

- $C_{10}H_{10}O_2N_2BrS_2Co$ *cis*-Bromobenzene-3:4-disulphonatodithylenediaminecobaltic hydroxide, salts of (DUFF), 1936.

C₁₁ Group.

- $C_{11}H_8O$ Dihydroxynaphthaldehydes (MORGAN and VINING), 177.
 $C_{11}H_8O$ Substance, from sodium and phenyl acetate (PERKIN), 1289.
 $C_{11}H_9N$ Norharman, and its salts (KERMACK, PERKIN, and ROBINSON), 1602.
 $C_{11}H_{10}O_2$ 4:5-Dimethoxy-*o*-phthalonic acid (+ 2H₂O) and its acid calcium salt (FARGHER and PERKIN), 1735.
 $C_{11}H_{10}O_2$ *o*-Methoxystyryl methyl ketone (HEILBRON and BUCK), 1509.
 $C_{11}H_{15}O_2$ Methyl *m*-opianates (FARGHER and PERKIN), 1741.
 $C_{11}H_{15}O_2$ *dl-trans-cyclo*Pentane-1:3-dicarboxylic acid, resolution of (PERKIN and SCARBOROUGH), 1400.
 $C_{11}H_{15}O_3$ Ethyl 6-ethoxy-3-methyl-2-pyrone-5-carboxylate (INGOLD and PERREN), 1601.
 $C_{11}H_{14}O_4$ Lactone of 1-hydroxycyclohexylethane- $\alpha\beta$ -tricarboxylic acid (BIRCH, GOUGH, and KON), 1326.
 $C_{11}H_{15}N_2$ 1:4-*endo*Ethylene-6-methyltetrahydroquinexaline, and its salts (MOORE and DOUBLEDAY), 1174.
 $C_{11}H_{16}O_2$ Hydroxymethylene-*l*-epicamphor (PERKIN and THORPE), 1096.
 $C_{11}H_{16}O_2$ *cyclo*Hexanespirocyclohexane-3:5-dione (NORRIS and THORPE), 1205.
 $C_{11}H_{16}O_3$ Ethyl *cyclopentanonedicarboxylate* (INGOLD), 349; (INGOLD and THORPE), 499.
 $C_{11}H_{16}O_3$ 1-Hydroxycyclohexylethane- $\alpha\beta$ -tricarboxylic acid, silver salt (BIRCH, GOUGH, and KON), 1326.

- $C_{11}H_{17}As$ γ -Phenylpropyldimethylarsine (BURROWS and TURNER), 429.
 $C_{11}H_{18}O_7$ Ethyl trimethyl saccharolactone (IRVINE and OLDHAM), 1757.

11 III

- $C_{11}H_9O_2N$ 2-Carboxyindole-3-acetic anhydride (KERMACK, PERKIN, and ROBINSON), 1623.
 $C_{11}H_9O_2N$ 1:2-Naphthaquinone-1-oxime-3-carboxylic acid, cobaltic salts (MORGAN and SMITH), 709.
 $C_{11}H_9O_4N_3$ 2-*m*-Nitrophenylglyoxaline-4:5-dicarboxylic acid (FARGHER), 163.
 $C_{11}H_9ON_5$ 5-Keto-4:5-dihydroindolediazine(1:4) (KERMACK, PERKIN, and ROBINSON), 1627.
 $C_{11}H_9O_2N_2$ Norharmol (KERMACK, PERKIN, and ROBINSON), 1619.
 $C_{11}H_9O_2S$ (1)Thionaphtha-4-oxycoumarin (SMILES and McCLELLAND), 1815.
 $C_{11}H_9O_2N$ 2-Carboxyindole-3-acetic acid (KERMACK, PERKIN, and ROBINSON), 1622.
 $C_{11}H_9O_4N_3$ 2-*m*-Aminophenylglyoxaline-4:5-dicarboxylic acid (FARGHER), 163.
 $C_{11}H_{10}O_2N_2$ 2-Carboxyindole-3-acetamide (KERMACK, PERKIN, and ROBINSON), 1623.
 $C_{11}H_{10}O_4N_4$ 5-Nitro-*p*-acetylaminophenylglyoxaline (GRANT and PYMAN), 1902.
 $C_{11}H_{10}O_4N_2$ Dimethyldiketotetrahydroquinazolinecarboxylic acid (SCOTT and COHEN), 668.
 $C_{11}H_{11}O_4N$ 1:3-Dimethylindole-2-carboxylic acid (KERMACK, PERKIN, and ROBINSON), 1636.
 3-Methoxy-4-methyl- α -quinolone (KERMACK, PERKIN, and ROBINSON), 1635.
 $C_{11}H_{10}O_2N_3$ 1-*p*-Nitrophenyl-3:5-dimethylpyrazole (MORGAN and DREW), 621.
 $C_{11}H_{11}O_4N$ 6-Methoxy-3-methylindole-2-carboxylic acid (KERMACK, PERKIN, and ROBINSON), 1640.
 $C_{11}H_{11}O_4N_3$ 3:5-Dimethylisooxazole-4-azoresorcinol (MORGAN and BEGGES), 703.
 $C_{11}H_{10}O_4N_2$ *cyclo*Hexanespiro-2:3-dicyanocyclopropane-2-carboxylic acid (BIRCH, GOUGH, and KON), 1325.
 $C_{11}H_{10}O_4N_2$ Acetylacetone-*p*-nitroanil (MORGAN and DREW), 624.
 $C_{11}H_{10}O_4N_2$ 1-*p*-Nitroanilinoacetylacetone (MORGAN and DREW), 623.
 $C_{11}H_{10}ON_3$ *cyclo*Hexane spiro-2:3-dicyanocyclopropane-2-carboxylamide (BIRCH, GOUGH, and KON), 1324.
 $C_{11}H_{10}O_4N$ *o*-Methoxystyrylmethyl ketoxime (HEILBRON and BUCK), 1529.
 $C_{11}H_{10}O_4N$ Carboethoxyamino-*m*-methoxybenzoic acids (FROELICHER and COHEN), 1431.
 $C_{11}H_{10}O_4N_3$ Acetyl derivative of 4-nitro-2-carboethoxyphenylhydrazine (KENNER and WITHAM), 1055.
 $C_{11}H_{10}O_4N_2$ Methylmalonomonoo-*o*-toluidide (NAIR), 1233.
 $C_{11}H_{10}O_4Cl_2$ *cyclo*Hexane spiro-4:4-dichlorocyclohexane-3:5-dione (NORRIS and THORPE), 1209.
 $C_{11}H_{10}O_4Br_2$ *cyclo*Hexanespiro-4:4-dibromocyclohexane-3:5-dione (NORRIS and THORPE), 1209.
 $C_{11}H_{10}O_4N_2$ *n*-Butaldehyde-2:4-dinitro-*m*-tolylhydrazone (BRADY and BOWMAN), 899.
 Methyl ethyl ketone 2:4-dinitro-*m*-tolylhydrazone (BRADY and BOWMAN), 899.
 $C_{11}H_{10}O_4Cl$ *cyclo*Hexanespiro-4-chlorocyclohexane-3:5-dione (NORRIS and THORPE), 1209.

- $C_{11}H_{13}O_2Br$ *cycloHexanespiro-4-bromocyclohexane-3:5-dione* (NORRIS and THORPE), 1208.
 $C_{11}H_{13}O_2N$ 4:5-Dimethoxy-*o*-tolyl methyl ketoxime (FARGHER and PERKIN), 1732.
 $C_{11}H_{13}O_2N_2$ 5-Hydroxy-4-methoxy-*o*-tolyl methyl ketone semicarbazone (FARGHER and PERKIN), 1733.
 $C_{11}H_{13}O_2N$ Ethyl α -cyano- γ -methylglutaconate (INGOLD and PERREN), 1597.
 $C_{11}H_{16}IAS$ *As*-Methyltetrahydroarsinoline methiodide (BURROWS and TURNER), 431.
 $C_{11}H_{17}ON$ Amino methylene-epicamphor (PERKIN and TITLEY), 1101.
 $C_{11}H_{17}O_2N$ Ethyl cyanomethylglutarate (INGOLD), 338; (INGOLD and THORPE), 500.
 $C_{11}H_{17}O_2N_2$ Semicarbazone of acid, $C_{10}H_{14}O_4$, from oxidation of *l*-epicampholenic acid (PERKIN and TITLEY), 1107.
 $C_{11}H_{17}O_2Br_2$ *iso*Propyl $\alpha\alpha'$ -dibromoglutarate (INGOLD), 318.
 $C_{11}H_{17}O_2N_2$ *cyclo*Heptenylacetone semicarbazone (KON), 827.
Piperitone semicarbazones (READ and SMITH), 784; (SIMONSEN), 1650.
 $C_{11}H_{19}O_2N_2$ Malondi-*n*- and -*iso*-butylamides (BACKES, WEST, and WHITELEY), 368.

II IV

- $C_{11}H_{11}O_4N_2Cl$ 6(7)-Chloro-7(6)-methylquinoxaline-2:3-dicarboxylic acid (+ $2H_2O$) (MORGAN and CHALLENGER), 1540.
 $C_{11}H_{11}O_4N_2Br$ 2-*p*-Bromobenzeneazoglyoxaline-4:5-dicarboxylic acid (FARGHER), 162.
 $C_{11}H_{11}O_5N_2Br$ 4-*p*-Bromobenzeneazo-2-methylglyoxaline-5-carboxylic acid (FARGHER), 161.
 $C_{11}H_{11}O_4N_2Br$ 2-*p*-Bromobenzenehydrazoglyoxaline-4:5-dicarboxylic acid (FARGHER), 163.
 $C_{11}H_{11}O_2N_2Br$ *p*-Bromobenzeneazocetylacetone (MORGAN and DREW), 622.
 $C_{11}H_{11}O_2N_2I$ 6-Nitroquinaldine methiodide (HAMER), 1435.
 $C_{11}H_{16}O_2ClBr$ *cycloHexanespiro-4-chloro-4-bromocyclohexane-3:5-dione* (NORRIS and THORPE), 1210.
 $C_{11}H_{16}O_2NTl$ Thalliumdiethyl nitrotolyl oxides (GODDARD), 1314.
 $C_{11}H_{16}O_2N_2Br_2$ Dibromomalondi*iso*butylamide (BACKES, WEST, and WHITELEY), 370.
 $C_{11}H_{16}O_2N_2Br$ Bromomalondi-*n*- and -*iso*-butylamides (BACKES, WEST, and WHITELEY), 363.

II V

- $C_{11}H_{15}O_2N_2SCO$ *cis-o*-Sulphobenzoacetatodiethylenediaminecobaltic hydroxide, salts of (DUFF), 1985.

II VI

- $C_{11}H_{15}O_2N_2BrSCO$ *cis-o*-Sulphobenzoacetatodiethylenediaminecobaltic bromide (+ H_2O) (DUFF), 1985.

C₁₂ Group.

- $C_{12}H_9N$ Carbazole, oxidation of (PERKIN and TUCKER), 216; additive compound of 4'-dimethylamino-2-hydroxydistyrylketone with (HEILBRON and BUCK), 1512.
 $C_{12}H_{10}N_2$ Harmine (KERMACK, PERKIN, and ROBINSON), 1602.
 $C_{12}H_{12}N$ 6-Ethylquinaldine (MILLS, HARRIS, and LAMBOURNE), 1300.
Tetrahydrocarbazole, and its picrate (PERKIN and PLANT), 1831.

- $C_{15}H_{14}O$ Acetyl derivative of 5-hydroxy-4-methoxy-*o*-tolyl methyl ketone (FARGHER and PERKIN), 1733.
 $C_{15}H_{14}N_2$ 6-Aminotetrahydrocarbazole (PERRIN and PLANT), 1833.
 $C_{15}H_{14}N_2$ 1:4-*endo* Trimethylene-6-methyltetrahydroquinoxaline, and its salts (MOORE and DOUBLEDAY), 1174.
 $C_{15}H_{18}O_4$ Ethyl aconitate, preparation of (INGOLD), 350.
 $C_{15}H_{20}O_4$ Ethyl α -acetoxyadipate (INGOLD), 966.
 $C_{15}H_{21}O_{11}$ Cellobiose, constitution of (HAWORTH and HIRST), 193.

12 III

- $C_{15}H_9Cl_3S_4$ Substance, from chlorobenzene and sulphur chloride (RAY), 1963.
 $C_{15}H_9O_2N_2$ Norharmolcarboxylic acid, and its sulphate (KERMACK, PERKIN, and ROBINSON), 1618.
 $C_{15}H_9O_4Cl$ 6-Methyl-2:4-bis(trichloromethyl)-1:3-benzodioxine-8-carboxylic acid, and its sodium salt (ALIMCHANDANI and MELDRUM), 203.
 $C_{15}H_{15}ON_2$ 5-Keto-7-methyl-4:5-dihydroindole-diazine(1:4) (KERMACK, PERKIN, and ROBINSON), 1635.
 2-Keto-1-methyl-2:3-dihydronorharman (KERMACK, PERKIN, and ROBINSON), 1638.
 $C_{15}H_{15}O_4N_4$ 11-Methoxy-5-keto-4:5-dihydroindole-diazine(1:4) (KERMACK, PERKIN, and ROBINSON), 1633.
 $C_{15}H_{15}O_4N_2$ *cyclo* Hexanespiro-2:3-dicyanocyclopropane-2:3-dicarboxylic anhydride (BIRCH, GOUGH, and KON), 1328.
 $C_{15}H_{15}N_2S_2$ Diaminothiauthren (RAY), 1964.
 $C_{15}H_{15}O_4N_2$ 4-Nitrobenzylideneamino-3:5-dimethylisooxazoles (MORGAN and BURGESS), 701.
 $C_{15}H_{15}O_4N$ 6-Methoxy-2-carboxyindole-3-acetic acid (KERMACK, PERKIN, and ROBINSON), 1641.
 $C_{15}H_{15}ON_2$ Acetylaminoquinaldines (HAMER), 1438.
 4-Benzylideneamino-3:5-dimethylisooxazole (MORGAN and BURGESS), 701.
 $C_{15}H_{15}O_4N_4$ 4-Benzoylamino-3:5-dimethylisooxazole (MORGAN and BURGESS), 701.
 $C_{15}H_{15}O_4N_4$ 4-*p*-Nitrobenzylidenehydrazino-3:5-dimethylisooxazole (MORGAN and BURGESS), 1548.
 $C_{15}H_{15}O_4N_2$ *cyclo* Hexanespiro-2:3-dicyanocyclopropane-2:3-dicarboxylic acid (BIRCH, GOUGH, and KON), 1327.
 Methyl dimethyldiketotetrahydroquinazolinecarboxylate (SCOTT and COHEN), 669.
 $C_{15}H_{15}O_2N$ Ethyl α -keto- β -*o*-nitrophenylbutyrate (KERMACK, PERKIN, and ROBINSON), 1634.
 $C_{15}H_{15}O_4N$ *cyclo* Hexanespiro-2-cyanocyclopropane-2:3:3-tricarboxylic acid (BIRCH, GOUGH, and KON), 1328.
 $C_{15}H_{15}ON_2$ Acetyl derivative from base $C_{20}H_{21}N_2$ (PEARMAN), 720.
 $C_{15}H_{15}O_4N_2$ 2:6-Dinitro-*o*-4-xylyl *n*-propyl ketone (MORGAN and HICKINBOTTOM), 1891.
 $C_{15}H_{15}OCl$ 6-Chloro-*m*-4-xylyl *n*-propyl ketone (MORGAN and HICKINBOTTOM), 1891.
 $C_{15}H_{15}O_4N$ 3-Acetylaminophenyl *n*-propyl ketone (MORGAN and HICKINBOTTOM), 1883.
 $C_{15}H_{15}O_4N$ Nitro-*m*-4-xylyl *n*-propyl ketones (MORGAN and HICKINBOTTOM), 1890.
 $C_{15}H_{15}ON$ 6-Amino-*m*-4-xylyl *n*-propyl ketone, and its salts (MORGAN and HICKINBOTTOM), 1890.

- $C_{12}H_{17}O_4N_2$ 2:4-Dinitro- β -diethylaminoethylbenzene, and its salts (McLEOD and ROBINSON), 1476.
 $C_{12}H_{19}O_2N_2$ Hydroxymethylene-epicamphorsemicarbazone (PERKIN and TITLEY), 1099.
 $C_{12}H_{19}O_8N_2$ Semicarbazone of ethyl cyclopentanone-2:4-dicarboxylate (INGOLD and THORPE), 500.
 $C_{12}H_{20}O_4N_2$ Ethyl $\alpha\alpha'$ -dicarbamyl- β -methylglutarate (GUPTA), 304.
 $C_{12}H_{20}IAS$ γ -Phenylpropyldimethylarsine methiodide (BURROWS and TURNER), 429.
 $C_{12}H_{22}O_4S_2$ Diacetyl derivative of sulphidobis- β -hydroxydiethyl sulphide (BENNETT and WHINCOP), 1863.
 $C_{12}H_{22}O_4N_2$ Ethyl 1- γ -acetyl- α -isopropylbutyrate semicarbazone (SIMONSEN), 1653.
 $C_{12}H_{24}O_4N_2$ Piperitonehydroxylamino-oximes (SIMONSEN), 1651.

12 IV

- $C_{12}H_9O_4Cl_2S_2$ Substance, from oxidation of dichlorothianthren (RÄY), 1962.
 $C_{12}H_9O_4N_2Ba$ Barium nitrophenoxides (GODDARD), 1162.
 $C_{12}H_9O_4N_2Ca$ Calcium nitrophenoxides (GODDARD), 1164.
 $C_{12}H_9O_4N_2Sr$ Strontium nitrophenoxides (GODDARD), 1163.
 $C_{12}H_{11}O_4N_2S$ 6-Acetylamino-1:2-naphthaquinone-2-oxime-3-sulphonic acid, cobaltic and β -naphthylamine salts (MORGAN and SMITH), 711.
 $C_{12}H_{11}O_4N_2Cl$ 8-Chloro-5-nitrotetrahydrocarbazole (PERKIN and PLANT), 1837.
 $C_{12}H_{12}O_4N_2S_2$ 8-Acetylamino-1:2-naphthaquinone-2-oxime-3:6-disulphonic acid, pentamminocobaltic salt (MORGAN and SMITH), 712.
 $C_{12}H_{13}O_4N_2Cl$ Ethyl 7-chloro-1-iminohydrindene-2-carboxylate (KENNER and WITHAM), 1459.
 $C_{12}H_{13}O_4Cl_3Te$ Tellurium *O*-ethylbenzoylacetone trichloride (MORGAN and DREW), 618.
 $C_{12}H_{13}O_4NS_2$ Ethyl dithiomescxotolylamates (NAIK), 1237.
 $C_{12}H_{14}O_4N_2Cl$ *cyclo*Hexanone-2-chloro-5-nitrophenylhydrazone (PERKIN and PLANT), 1837.
 $C_{12}H_{21}O_4N_2Co$ *cis*-Phthalatodiethylenediaminecobaltic hydroxide, salts of (DUFF), 1984.
 $C_{12}H_{14}O_4N_2S_2$ Methylmalonodimethylamide disulphide (NAIK), 1239.

12 V

- $C_{12}H_{11}O_4N_2SAs_2$ 3:3'-Diamino-4:4'-dihydroxy-5-sulphinoarsenobenzene, hydrochloride of (KING), 1115.
 $C_{12}H_{11}O_4N_2SAs_2$ 3:3'-Diamino-4:4'-dihydroxy-5-sulphoarsenobenzene, hydrochloride of (KING), 1117.
 $C_{12}H_{11}O_4N_2S_2As_2$ 3:3'-Diamino-4:4'-dihydroxy-5:5'-disulphinoarsenobenzene (KING), 1113.
 $C_{12}H_{12}O_4N_2S_2As_2$ 3:3'-Diamino-4:4'-dihydroxy-5-sulpho-5'-sulphinoarsenobenzene (KING), 1118.
 $C_{12}H_{12}O_4N_2S_2As_2$ 3:3'-Diamino-4:4'-dihydroxy-5:5'-disulphoarsenobenzene (KING), 1116.
 $C_{12}H_{20}O_4N_2BrCo$ *cis*-Phthalatodiethylenediaminecobaltic bromide (+ 3H₂O) (DUFF), 1984.

 C_{12} Group.

- uH_{10} Fluorene, additive compounds of 4'-dimethylamino-2-hydroxydistyryl ketone with (HEILBRON and BUCK), 1511.

13 II

- $C_{15}H_{10}O$ Benzophenone, additive compounds of 4'-dimethylamino-2-hydroxy-distyryl ketone with (HEILBRON and BUCK), 1513.
 $C_{15}H_{14}O_3$ *ac*-1-Keto-3-methyltetrahydronaphthyl-3-acetic acid, and its silver salt (KON and STEVENSON), 90.
 $C_{15}H_{15}N$ 9-Methyltetrahydrocarbazole (PERKIN and PLANT), 1834.
 $C_{15}H_{16}N_2$ 6-Amino-9-methyltetrahydrocarbazole, and its picrate (PERKIN and PLANT), 1835.
 $C_{15}H_{18}O_3$ Ethyl cyclopentanespirocyclohexane-3:5-dione-2-carboxylate (+ H_2O) (NORRIS and THORPE), 1207.
 $C_{15}H_{18}O_3$ 1-Keto-3-methyloctahydronaphthyl-3-acetic acid, and its silver salt (KON and STEVENSON), 92.

13 III

- $C_{15}H_9O_4Cl$ Lactone of 7:8-dihydroxy-2:4-bis(trichloromethyl)-6,8-trichloro- α -hydroxyethyl-1:3-benzodioxine-5-carboxylic acid (ALIM-CHANDANI and MELDRUM), 206.
 $C_{15}H_9O_3N_3$ Nitro-3-keto-2-phenyl-1:3-dihydroindazoles, and their sodium salts (KENNER and WITHAM), 1056.
 $C_{15}H_9O_3N_3$ *p*-Nitrobenzaldoxime-*N*-*p*-nitrophenyl ether (BARROW and GRIFFITHS), 216.
 $C_{15}H_{10}O_3N_2$ Acetyl derivative of 2-carboxyindole-3-acetamide (KERMACK, PERKIN, and ROBINSON), 1624.
 $C_{15}H_{10}O_3N_2$ *p*-Nitrobenzaldoxime-*N*-phenyl ether (BARROW and GRIFFITHS), 213.
 $C_{15}H_{10}N_4Cl$ 6-Chloro-3-phenyl-3:4-tolylenediazoimine (MORGAN and JONES), 191.
 $C_{15}H_{10}O_2N$ Dimethyl 2-carboxyindole-3-acetate (KERMACK, PERKIN, and ROBINSON), 1623.
 $C_{15}H_{13}N_4Cl$ 6-Chloro-3-phenyl-3:4-tolylenediamine (MORGAN and JONES), 191.
 $C_{15}H_{13}N_4Cl$ Benzene-5-azo-6-chloro-2:4-tolylenediamine, and its dihydrochloride (MORGAN and JONES), 188.
 $C_{15}H_{14}ON_2$ Harmaline (KERMACK, PERKIN, and ROBINSON), 1602.
 $C_{15}H_{14}O_2N_2$ 6-Nitro-9-methyltetrahydrocarbazole (PERKIN and PLANT), 1834.
 $C_{15}H_{14}O_2N_2$ Diacetyl derivative of glycerol α :2:4-dinitrophenyl ether (FAIRBOURNE and TOMS), 1037.
 $C_{15}H_{15}O_2N$ Ethyl 6-methoxy-3-methylindole-2-carboxylate (KERMACK, PERKIN, and ROBINSON), 1640.
 $C_{15}H_{15}O_4N$ Ethyl α -keto- β -*o*-nitro-*p*-methoxyphenylbutyrate (KERMACK, PERKIN, and ROBINSON), 1639.
 $C_{15}H_{16}O_2N_2$ Methyl ether of 4-*p*-hydroxybenzylhydantoin *OO*-dimethyl ether (SCOTT and COHEN), 671.
 $C_{15}H_{16}O_2N_2$ *p*-Nitroanilino-ethoxyacetone (MORGAN and DREW), 622.
 $C_{15}H_{16}NI$ 6-Ethylquinaldine methiodide (MILLS, HARRIS, and LAMBHOUSE), 1300.
 $C_{15}H_{17}O_4N$ Ethyl α -cyano- γ -carboxyglutaconate, and its metallic salt (INGOLD and PERREN), 1594.
 $C_{15}H_{17}ON$ β -Diethylaminopropiophenone, and its salts (McLEOD and ROBINSON), 1475.
 $C_{15}H_{18}O_4N_2$ Di(diethylaminomethyl)trimethylene ether (McLEOD and ROBINSON), 1473.

13 IV

- $C_{15}H_9O_2N_3Cl$ 3-Chloro-5-nitro-2-phenylindazole (KENNER and WITHAM), 1057.

- $C_{12}H_{10}O_2N_2Cl$ Chloronitrophenyltolynitrosoamines (MORGAN and JONES), 190.
 $C_{12}H_{10}O_2N_2Cl$ Chloronitro-*N*-phenyltoluidines (MORGAN and JONES), 190; (MORGAN and GLOVER), 1704.
 $C_{12}H_{11}O_3NS_1$ Ethyl γ -phenylcarbamyloxy-bisdisulphidoacetate (NAIK), 1241.
 $C_{12}H_{10}O_3N_2S$ Benzenediazo-*p*-toluenesulphinate (DUTT, WHITEHEAD, and WORMALL), 2089.
 $C_{12}H_{12}O_2N_2Cl$ 4'-Nitrobenzene-5-azo-6-chloro-2,4-tolylenediamine (MORGAN and JONES), 188.
 $C_{12}H_{15}ON_2I$ Acetylaminquinaldine methiodides (HAMER), 1438.
 $C_{12}H_{15}ONBr$ α -Bromopropiono-*d*-bornylamide (SHIMOMURA and COHEN), 1822.
 $C_{12}H_{22}O_2N_2Co$ *cis*-Homophthalatodiethylenediaminecobaltic hydroxide, salts of (DUFF), 1936.

13 V

- $C_{12}H_{22}O_2N_2SCo$ *cis*-Benzylsulphacetatodiethylenediaminecobaltic hydroxide, salts of (DUFF), 1935.

13 VI

- $C_{12}H_{22}O_2N_2BrSCo$ *cis*-Benzylsulphacetatodiethylenediaminecobaltic bromide (+ 3H₂O) (DUFF), 1935.

C₁₄ Group.

- $C_{14}H_{10}$ Phenanthrene, additive compound of 4'-dimethylamino-2-hydroxy-distyryl ketone with (HEILBRON and BUCK), 1511.
 $C_{14}H_{12}$ 9:10-Dihydrophenanthrene, preparation of (HENSTOCK), 1461.
 $C_{14}H_{22}$ 1:4-Di-*n*-butylbenzene (MORGAN and HICKINBOTTOM), 1892.

14 II

- $C_{14}H_8O_3$ Ellagic acid, formation of, from gallotannin (NIERENSTEIN, SPIERS, and GEAKE), 275.
 $C_{14}H_8Br_2$ Dibromophenanthrene (HENSTOCK), 57.
 $C_{14}H_8Br_2$ Bromophenanthrene dibromide (HENSTOCK), 57.
 $C_{14}H_{10}O_3$ 1-Hydroxy-3-methylxanthone, and its potassium derivative (PERKIN), 1291.
 $C_{14}H_{16}N_6$ 1:10-Dimethyl-5:6-naphthazinediazine (KENNER and STUBBINGS), 602.
 $C_{14}H_{16}O_3$ *ac*-1-Keto-3-ethyltetrahydronaphthyl-3-acetic acid, and its silver salt (KON and STEVENSON), 92.
 $C_{14}H_{16}N_4$ 6:6'-Diamino-2:2'-ditolyl (KENNER and STUBBINGS), 600.
 $C_{14}H_{20}O_4$ Ethyl cyclohexanespirocyclohexane-3:5-dione-2-carboxylate (+ H₂O) (NORRIS and THORPE), 1204.
 $C_{14}H_{22}N$ 2-Amino-1:4-di-*n*-butylbenzene, and its salts (MORGAN and HICKINBOTTOM), 1892.

14 III

- $C_{14}H_8OBr_2$ Dibromophenanthrone (HENSTOCK), 58.
 $C_{14}H_8O_2N_2$ Dilactam of γ -6:6'-diaminodiphenic acid (KENNER and STUBBINGS), 601.
 $C_{14}H_8O_2S_2$ Thianthrendicarboxylic acid (RÄV), 1966.
 $C_{14}H_8O_2N_2$ "Hydrazide" of γ -6:6'-dinitrodiphenic acid (KENNER and STUBBINGS), 600.
 $C_{14}H_8O_2N_2$ γ -6:6'-Dinitrodiphenic acid, and its salts (KENNER and STUBBINGS), 593.
 $C_{14}H_8O_2N$ Nitro-1-hydroxy-3-methylxanthenes (PERKIN), 1293.

- $C_{14}H_9NBr_2$ Dibromo-9-aminophenanthrene (HENSTOCK), 59.
 $C_{14}H_9OCl_2$ Diphenylchloroacetyl chloride, action of magnesium phenyl haloids on (MCKENZIE and BOYLE), 1131.
 $C_{14}H_{10}O_2S_2$ *m*-Dithiobenzoic acid (SMILES and STEWART), 1792.
 $C_{14}H_{10}O_4N_4$ γ -6:6'-Dinitrodiphenamide (KENNER and STUBBINGS), 599.
 $C_{14}H_{10}O_2S_2$ Benzoic acid *m*-disulphoxide (SMILES and STEWART), 1797.
 $C_{14}H_{10}N_4S$ 4'-Triazo-1-phenyl-5-methylbenzothiazole (MORGAN and WEBSTER), 1074.
 $C_{14}H_{10}Cl_2S_2$ Dichlorodimethylthianthren (RAY), 1963.
 $C_{14}H_{11}N_2Cl$ 5-Chloro-1-phenyl-6-methylbenziminazole (MORGAN and CHALLENGER), 1543.
 $C_{14}H_{15}ON_2$ Phenylglyoxalphenylhydrazone, preparation, tautomerism, and solubility of (SIDGWICK and EWBANK), 487.
 $C_{14}H_{15}O_2N_4$ Benzaldehydedinitrotolylhydrazones (BRADY and BOWMAN), 899.
 $C_{14}H_{15}O_4N_3$ 6-Nitro-*m*-xylene-4-azoresorcinol (PEARMAN), 717.
 $C_{14}H_{15}O_2N_2$ Diamide of $\alpha\alpha'$ -dicyano- β -benzylglutaric acid (KON and STEVENSON), 93.
 $C_{14}H_{15}O_2N_2$ 5- and 6-Nitro-9-acetyltetrahydrocarbazoles (PERRIN and PLANT), 1832.
 $C_{14}H_{15}O_4N_2$ *p*-Nitrobenzoyl derivative of β -hydroxy- β -3:4-methylene-dioxyphenylethylamine (MASON), 1980.
 $C_{14}H_{15}ClIBi$ Di-*p*-tolylchlorobismuthine (CHALLENGER and ALLPRESS), 917.
 $C_{14}H_{15}ON$ 9-Acetyltetrahydrocarbazole (PERRIN and PLANT), 1831.
 $C_{14}H_{15}O_4N_3$ Benzoyl derivative of α -methylamino- β -glyoxaline-4-*pro*-pionic acid (+ $\frac{1}{2}H_2O$) (FARGHER and PYMAN), 733.
 $C_{14}H_{15}ON_2$ 6-Acetylaminotetrahydrocarbazole (PERRIN and PLANT), 1833.
 $C_{14}H_{15}O_4N_2$ Indole-2-carboxy- α -(carbethoxy)ethylamide (KERMACK, PERRIN, and ROBINSON), 1628.
 $C_{14}H_{15}O_4Cl$ Ethyl *m*-chlorobenzylmalonate (KENNER and WITHAM), 1400.
 $C_{14}H_{15}O_4N_2$ 4-*p*-Acetoxybenzylhydantoin *OO*-dimethyl ether (SCOTT and COHEN), 671.
 $C_{14}H_{15}O_4N_2$ Semicarbazone of α -1-keto-3-methyltetrahydronaphthyl-3-acetic acid (KON and STEVENSON), 91.
 $C_{14}H_{15}N_3I$ Phenylbenzylmethylazonium iodide, additive compound of thiocarbamide and (SINGH and LAL), 211.
 $C_{14}H_{15}N_2Cl_2$ 3:7-Diamino-8-methylphenazine methochloride (COHEN and CRABTREE), 2063.
 $C_{14}H_{15}ON_2$ *cyclo*hexanone-*p*-acetylaminophenylhydrazone (PERRIN and PLANT), 1833.
 $C_{14}H_{15}O_4N$ 6-Acetylaminom-4-xylyl *n*-propyl ketone (MORGAN and HICKINBOTTOM), 1890.
 $C_{14}H_{15}O_4N_2$ 2-Nitro-1:4-di-*n*-butylbenzene (MORGAN and HICKINBOTTOM), 1892.
 $C_{14}H_{15}O_4N_3$ Semicarbazone of 1-keto-3-methyloctahydronaphthyl-3-acetic acid (KON and STEVENSON), 93.
 $C_{14}H_{15}O_4N$ Ethyl ω -cyanomethanetriacetate (INGOLD), 340, 352.

14 IV

- $C_{14}H_9O_4N_2Cl_2$ Chloride of γ -6:6'-dinitrodiphenic acid (KENNER and STUBBINGS), 599.
 $C_{14}H_9O_2NBr_2$ Dibromo-9-nitrophenanthrene (HENSTOCK), 58.
 $C_{14}H_9ONBr_2$ Dibromophenanthroneoxime (HENSTOCK), 58.
 $C_{14}H_{10}ONCl$ Benzoyl derivative of 2-chloro-5-nitro-*p*-cresol (DAVIES), 867.

- $\gamma_1\text{H}_{10}\text{O}_2\text{N}_2\text{Cd}$ Cadmium dinitrotolyloxides (D. and A. E. GODDARD), 2048.
 $\gamma_1\text{H}_{10}\text{O}_2\text{N}_2\text{Mg}$ Magnesium dinitrotolyloxides (D. and A. E. GODDARD), 2048.
 $\gamma_1\text{H}_{10}\text{O}_2\text{N}_2\text{Sr}$ Strontium dinitrotolyloxides (D. and A. E. GODDARD), 2047.
 $\gamma_1\text{H}_{10}\text{O}_2\text{N}_2\text{Zn}$ Zinc dinitrotolyloxides (D. and A. E. GODDARD), 2048.
 $\gamma_1\text{H}_{10}\text{NCIS}$ 4'-Chloro-1-phenyl-5-methylbenzothiazole (MORGAN and WEBSTER), 1074.
 $\gamma_1\text{H}_{11}\text{ONS}$ 1-Phenyl-5-methylbenzothiazole-4'-diazonium hydroxide, salts of (MORGAN and WEBSTER), 1073, 1076.
 $\gamma_1\text{H}_{10}\text{N}_2\text{S}_2$ 1-Phenyl-5-methylbenzothiazole-4'-diazosulphonic acid, sodium salts (MORGAN and WEBSTER), 1075.
 $\gamma_1\text{H}_{12}\text{O}_2\text{N}_2\text{S}$ *N*-Sulphidobisbenzamide (NAIK), 1168.
 $\gamma_1\text{H}_{12}\text{O}_2\text{N}_2\text{S}_2$ Disulphidobis-salicylamide (NAIK), 1169.
 $\gamma_1\text{H}_{12}\text{O}_2\text{N}_2\text{Ba}$ Barium nitrotolyloxides (D. and A. E. GODDARD), 2046.
 $\gamma_1\text{H}_{12}\text{O}_2\text{N}_2\text{Ca}$ Calcium nitrotolyloxides (D. and A. E. GODDARD), 2046.
 $\gamma_1\text{H}_{12}\text{O}_2\text{N}_2\text{Mg}$ Magnesium nitrotolyloxides (D. and A. E. GODDARD), 2047.
 $\gamma_1\text{H}_{12}\text{O}_2\text{N}_2\text{Sr}$ Strontium nitrotolyloxides (D. and A. E. GODDARD), 2046.
 $\gamma_1\text{H}_{13}\text{O}_2\text{NBr}$ Ethyl ester of α -bromopropionyl-L-tyrosine (SHIMOMURA and COHEN), 1823.

C₁₅ Group.

- $\gamma_1\text{H}_{10}\text{O}_2$ 1:6-Dihydroxy-2-methylanthraquinone (SIMONSEN and RAU), 1339.
 $\text{C}_{15}\text{H}_{12}\text{O}_2$ 9-Acetoxyfluorene, preparation of (HENSTOCK), 1463.
 $\text{C}_{15}\text{H}_{12}\text{O}_2$ 1-Hydroxy-3-methylxanthone methyl ether (PERKIN), 1292.
 $\text{C}_{15}\text{H}_{11}\text{O}_6$ Catechin, constitution of (NIERENSTEIN), 164.
 2:4:6:3':4'-Pentahydroxy-3-phenylehroman (NIERENSTEIN), 169.

15 III

- $\text{C}_{15}\text{H}_9\text{O}_6\text{Cl}_3$ Lactone of 7:8- $\beta\beta\beta$ -trichloroethylidenedioxy-2:4-bis-trichloromethyl-6- $\beta\beta\beta$ -trichloro- α -hydroxyethyl-1:3-benzodioxine-5-carboxylic acid (ALIMCHANDANI and MELDRUM), 208.
 $\text{C}_{15}\text{H}_9\text{O}_6\text{Cl}_3$ Lactone of 7:8-dimethoxy-2:4-bis-trichloromethyl-6- β -trichloro- α -hydroxyethyl-1:3-benzodioxine-5-carboxylic acid (ALIMCHANDANI and MELDRUM), 207.
 $\text{C}_{15}\text{H}_{10}\text{N}_2\text{S}$ 4'-Cyano-1-phenyl-5-methylbenzothiazole (MORGAN and WEBSTER), 1076.
 $\text{C}_{15}\text{H}_{11}\text{O}_3\text{Cl}_3$ 3:4:5-Triacetoxy-2-trichloromethylphthalide (ALIMCHANDANI and MELDRUM), 208.
 $\text{C}_{15}\text{H}_{13}\text{O}_2\text{N}_2$ 3:5-Dimethylisooxazole-4-azo- β -naphthol (MORGAN and BURGESS), 702.
 $\text{C}_{15}\text{H}_{13}\text{O}_2\text{N}_2$ 4-Nitro-2-carbethoxyazobenzene (KENNER and WITHAM), 1056.
 $\text{C}_{15}\text{H}_{13}\text{O}_2\text{N}_2$ 6-Nitro-*m*-xylene-4-azosalicylic acid (PEARMAN), 718.
 $\text{C}_{15}\text{H}_{13}\text{N}_4\text{Br}$ 5-Amino-4-(2'-amino-5'-bromophenyl)-2-phenylglyoxaline, and its salts (FARGHER), 160.
 $\text{C}_{15}\text{H}_{13}\text{ON}_4$ 3:5-Dimethylisooxazole-4-azo- β -naphthylamine (MORGAN and BURGESS), 703.
 $\text{C}_{15}\text{H}_{13}\text{ON}$ β -Amino- β -phenylpropiophenone (MCKENZIE and BARROW), 69.
 $\text{C}_{15}\text{H}_{10}\text{O}_2\text{N}_2$ *p*-Nitrobenzaldoxime-*N*-*p*-ethylamino phenyl ether (BARROW and GRIFFITHS), 215.
 $\text{C}_{15}\text{H}_{13}\text{O}_2\text{N}_2$ *p*-Nitrobenzaldoxime-*N*-*p*-dimethylamino phenyl ether (BARROW and GRIFFITHS), 214.

- $C_{15}H_{13}O_4N$ β -Carbethoxy- α -methylvinyl indole-2-carboxylate (KERMACK, PERKIN, and ROBINSON), 1629.
- $C_{15}H_{13}O_4N_2$ Nitrocarbethoxyhydrazobenzenes (KENNER and WITHAM), 1056.
- $C_{15}H_{16}ON_2$ β -Amino-*p*-phenylpropionanilide (McKENZIE and BARROW), 71.
- $C_{15}H_{17}O_2N$ 4-Dimethylamino-2-hydroxybenzhydrol, and its salts (KRISHNA and POPE), 287.
- $C_{15}H_{17}O_2N_2$ 3:5-Dicyano-2:6-diketo-4-cyclohexenylmethyl-4-methylpiperidine (KON and STEVENSON), 92.
- $C_{15}H_{17}O_3N_2$ Antipyrrolaminodiacetic acid, and its salts, additive compounds of, with neutral salts (FARGHER and KING), 292.
- $C_{15}H_{18}ON_2$ 6-Acetylamino-9-methyltetrahydrocarbazole (PERKIN and PLANT), 1835.
- $C_{15}H_{18}N_4Cl_2$ 8:7-Diamino-2:8-dimethylphenazine methochloride (COHEN and CRATREE), 2067.
- $C_{15}H_{19}ON$ Anilide of lactonic acid $C_{10}H_{14}O_4$ (BIRCH, GOUGH, and KON), 1327.
- $C_{15}H_{19}O_3N$ Anilic acid from cyclo-hexane-1-acetic-1-carboxylic acid (NORRIS and THORPE), 1207.
- $C_{15}H_{19}O_3N_2$ Semicarbazone of α -1-keto-3-ethyltetrahydronaphthyl-3-acetic acid (KON and STEVENSON), 92.
- $C_{15}H_{20}O_3N_2$ Indole-2-carboxyacetylamide (KERMACK, PERKIN, and ROBINSON), 1626.
- $C_{15}H_{21}O_2N_2$ Eserine, degradation of (STEDMAN), 391.
- $C_{15}H_{21}O_6Ga$ Gallium acetylacetone (MORGAN and DREW), 1061.
- $C_{15}H_{21}O_4In$ Indium acetylacetone (MORGAN and DREW), 1062.
- $C_{15}H_{23}O_4N$ Ethyl α - and α' -cyano- α -methylmethanetriacetates (INGOLD and PERREN), 1600, 1668.

15 IV

- $C_{15}H_{10}O_2N_2Br$ Dibromomalon-2:4:6-tribromoanilide (BACKES, WEST, and WHITELEY), 375.
- $C_{15}H_{10}O_2N_2Br_2$ Dibromomalon-2:4-dibromoanilide (BACKES, WEST, and WHITELEY), 374.
- $C_{15}H_{10}O_2N_2S_2$ Tetranitrodithiomesoxanilide (NAIK), 383.
- $C_{15}H_{10}O_2N_2Br_4$ Dibromomalon-*p*-bromoanilide (BACKES, WEST, and WHITELEY), 374.
- $C_{15}H_{11}O_2N_2Br_2$ Bromomalon-*p*-bromoanilide (BACKES, WEST, and WHITELEY), 374.
- $C_{15}H_{12}O_2N_2Br_2$ Dibromomalonanilide (BACKES, WEST, and WHITELEY), 375.
- $C_{15}H_{12}O_2N_2S_2$ Dithiomesoxanilide (NAIK), 382.
- $C_{15}H_{14}ONCl$ β -*m*-Chlorophenylpropionanilide (KENNER and WITHAM), 1480.
- $C_{15}H_{15}O_2NBr_2$ Dibromo-derivative of 4-dimethylamino-2-hydroxybenzhydrol (KRISHNA and POPE), 287.

 C_{16} Group.

- $C_{16}H_{12}O_2$ ω -Dimethylanthraquinones (FAIRBOURNE), 1573.
- $C_{16}H_{14}O_2$ 4'-Hydroxy-2-methoxy-3-methylbenzophenone-6-carboxylic acid, and its silver salt (SIMONSEN and RAV), 1346.
- $C_{16}H_{19}As$ Phenyl- γ -phenylpropylmethylarsine (BURROWS and TERNE), 431.
- $C_{16}H_{26}O_4$ Ethyl *n*-butane- $\alpha\beta\gamma\delta$ -tetracarboxylate (INGOLD), 348.
- Ethyl carboxymethanetriacetate (INGOLD and POWELL), 1873.
- $C_{16}H_{32}O_2$ Palmitic acid, sodium salt, adsorption by (LAING), 1669.

16 III

- $C_{16}H_8O_2N_2$ 9:10-Dinitro-2-ethoxyphenanthrene (HENSTOCK), 61.
 $C_{16}H_{11}O_2N_2$ 1-Benzoyl-4(or 5)-nitrophenylglyoxalines (GRANT and PYMAN), 1899.
 $C_{16}H_{15}ON_2$ 1-Benzoyl-4(or 5)-phenylglyoxaline (GRANT and PYMAN), 1899.
 $C_{16}H_{11}O_2S_2$ Diacetylthianthren (RÄY), 1965.
 $C_{16}H_{13}O_2N_2$ Methyl γ -6:8'-dinitrodiphenate (KENNER and STURRINGS), 599.
 $C_{16}H_{13}OBr$ 10-Bromo-2-ethoxyphenanthrene (HENSTOCK), 60.
 $C_{16}H_{11}O_2N_2$ Substance from benzenediazonium chloride and 4-*p*-hydroxybenzylhydantoin (SCOTT and COHEN), 671.
 $C_{16}H_{12}O_2N_2$ Carbethoxyaminophenanthridone (KENNER and STUBBINGS), 601.
 Phenylpiazones (FARGHER and PERKIN), 1743.
 $C_{16}H_{15}O_2N$ Anilino-*m*-opianic acid (FARGHER and PERKIN), 1739.
 Substance, from anilino-*m*-opianic acid and hydrochloric acid (FARGHER and PERKIN), 1740.
 $C_{16}H_{15}O_2N_2$ Benzaldehyde 4-nitro-2-carbethoxyphenylhydrazone (KENNER and WITHAM), 1955.
 $C_{16}H_{14}O_2N_2$ *n*-Butyrophenone-3-azoresorcinol (MORGAN and HICKINBOTTOM), 1884.
 $C_{16}H_{16}O_2N_4$ 3-Nitro-4-hydroxyphenyl *n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1888.
 $C_{16}H_{17}O_2N_2$ Phenyl *n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1882.
 $C_{16}H_{17}O_2N_2$ 3-Hydroxyphenyl *n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1885.
 $C_{16}H_{17}N_2Cl$ 4-Chlorophenyl *n*-propyl ketone phenylhydrazone (MORGAN and HICKINBOTTOM), 1886.
 $C_{16}H_{14}O_2N_2$ 5-Hydroxy-4-methoxy-*o*-tolyl methyl ketone phenylhydrazone (FARGHER and PERKIN), 1733.
 $C_{16}H_{18}O_2S_2$ $\beta\beta'$ -Diphenoxydiethyl disulphide (BENNETT), 425.
 $C_{16}H_{17}O_2N_2$ *o*- and *p*-Nitrophenyliminocamphor (FORSTER and SAVILLE), 794.
 $C_{16}H_{18}O_2S_6$ 3:5:3':5'-Tetraketo-4:4'-bisdithio-1:1':1':1'-tetramethyldicyclohexyl 2:2'-disulphide (NAIK), 1240.
 $C_{16}H_{18}ON$ Anilide of *cyclopentanespirocyclohexane*-3:5-dione (NORRIS and THORPE), 1207.
 $C_{16}H_{17}O_2N_2$ *o*- and *p*-Nitrophenylnitrosoaminocamphor (FORSTER and SAVILLE), 793.
 $C_{16}H_{19}O_2N_2$ Dinitrophenylaminocamphor (FORSTER and SAVILLE), 792.
 $C_{16}H_{15}N_2I$ Phenylbenzylallylazonium iodide, additive compound of thiocarbamide and (SINGH and LAL), 211.
 $C_{16}H_{19}O_2N_2$ *N*-Phenylcamphorimidoxime and Phenylnitrosoaminocamphor (FORSTER and SAVILLE), 792.
 $C_{16}H_{20}N_4Cl_2$ 3-Amino-7-dimethylamino-2-methylphenazine methochloride (COHEN and CRAETTER), 2058.
 $C_{16}H_{21}ON$ Phenylaminocamphor, hydrochloride of (FORSTER and SAVILLE), 791.
 $C_{16}H_{21}N_2I$ Phenylbenzylpropylazonium⁺ iodide, additive compound of thiocarbamide and (SINGH and LAL), 211.
 $C_{16}H_{23}ON_2$ *p*-Aminophenylaminocamphor, and its dihydrochloride (FORSTER and SAVILLE), 794.
 $C_{16}H_{23}O_2N_2$ 1-Methylindole-2-carboxyacetylaldehyde (KERMACK, PERKIN, and ROBINSON), 1637.
 Scatole-2-carboxyacetylaldehyde (KERMACK, PERKIN, and ROBINSON), 1635.

$C_{12}H_{22}O_8N_2$ 6-Methoxyindole-2-carboxyacetylamide (KERMAK, PERKIN, and ROBINSON), 1633.

16 IV

- $C_{12}H_8O_4N_2S$ *N*-Sulphidodiphtalimide (NAIR), 1170.
 $C_{14}H_{10}O_2N_2S_2$ 5-Disulphido-1:3-diphenylbarbituric acid (NAIR), 385.
 $C_{16}H_{11}ONBr_2$ Dibromo-9-acetylaminophenanthrene (HENSTOCK), 59.
 $C_{14}H_{11}O_2N_2Br$ 4-*p*-Bromobenzeneazo-2-phenylglyoxaline-5-carboxylic acid, and its sodium salt (FARGHER), 159.
 $C_{16}H_{11}O_2N_2Br$ 5-Bromo-1:3-diphenylbarbituric acid (BACKES, WEST, and WHITELEY), 378.
 $C_{14}H_{11}ON_2S$ 2-Acetyl-3-oxy(1)thionaphthenphenylhydrazone (SMILES and McCLELLAND), 1814.
 $C_{16}H_{14}O_2N_2S_2$ Diacetylaminothianthren (RÅV), 1964.
 $C_{14}H_{15}O_2N_2Cl_2$ 3:4-Dichlorophenyl *n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1889.
 $C_{14}H_{15}O_2N_2Cl$ 4-Chloro-3-nitrophenyl *n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1888.
 $C_{16}H_{15}O_2N_2Cl$ 4-Chloro-3-nitrophenyl *n*-propyl ketone phenylhydrazone (MORGAN and HICKINBOTTOM), 1888.
 Chlorophenyl *n*-propyl ketone *p*-nitrophenylhydrazones (MORGAN and HICKINBOTTOM), 1885.

 C_{17} Group.

- $C_{17}H_8O_8$ Benzophenone-2:4:2':4'-tetracarboxylic acid ketodilactone (MILLS and NODDER), 2099.
 $C_{17}H_{10}O_8$ Benzhydrol-2:4:2':4'-tetracarboxylic acid lactone (MILLS and NODDER), 2102.
 $C_{17}H_{11}O_4$ 1:6-Dimethoxy-2-methylanthraquinone (SIMONSEN and RAU), 1347.
 Phenoleitraconein, and its potassium salt (KRISHNA and POPE), 289.
 $C_{17}H_{15}As$ Phenyl-*n*-aphthylmethylarsine (BURROWS and TURNER), 432.
 $C_{17}H_{16}O_3$ Eugenol benzoates, melting points of (McKIE), 777.
 $C_{17}H_{16}O_6$ 2:4'-Dimethoxy-3-methylbenzophenone-6-carboxylic acid, and its silver salt (SIMONSEN and RAU), 1347.
 $C_{17}H_{14}Br_2$ Hydrocarbon, from petroleum extract of the bromination of phenanthrene (HENSTOCK), 60.
 $C_{17}H_{18}O$ Di-*m*-xylyl ketone, preparation of (MILLS and NODDER), 2099.
 $C_{17}H_{20}O$ Benzylidene-*dl*-piperitone (READ and SMITH), 784.
 $C_{17}H_{16}O_8$ Ethyl cyclopentane-1:2:2:3-tetracarboxylate (PARKIN and ROBINSON), 1397.

17 III

- $C_{17}H_8O_4Cl_2$ Acid chloride of benzophenone-2:4:2':4'-tetracarboxylic acid ketodilactone (MILLS and NODDER), 2100.
 $C_{17}H_8O_4Cl_2$ Lactone of 7:8-diacetoxy-2:4-bis(trichloromethyl)-6-β-trichloro-α-hydroxyethyl-1:3-benzodioxine-5-carboxylic acid (ALIX-CHANDANI and MELDRUM), 207.
 $C_{17}H_{10}O_4Br_4$ Tetrabromophenoleitraconein (KRISHNA and POPE), 290.
 $C_{17}H_{11}N_3Cl$ 10-Chloro-9-methyl-αβ-naphthaphenazine (MORGAN and CHALLENGER), 1540.
 $C_{17}H_{16}ON$ Anilide of cyclohexane spirocyclohexane-3:5-dione (NORRIS and THORPE), 1206.
 $C_{17}H_{14}O_2N$ Dihydroxynaphthylideneanilines (MORGAN and VINING), 179.
 $C_{17}H_{15}O_4N$ β-Phthalimino-β-phenylpropionic acid (McKENZIE and BARROW), 73.

- $C_{17}H_{15}O_2N_2$ 2-Carboxyindole-3-acetanilide (KERMACK, PERKIN, and ROBINSON), 1625.
- $C_{17}H_{15}OAS$ Phenyl- α -naphthylmethylarsine oxide (BURROWS and TURNER), 432.
- $C_{17}H_{15}O_2N$ Anilino-4:5-dimethoxyphthalonic acid, aniline salt (FARGHER and PERKIN), 1738.
- $C_{17}H_{15}O_2N_2$ 1-Toluene-*p*-sulphonylnaphthylenediaminesulphonic acids, and their sodium salts (MORGAN and GRIST), 608.
- $C_{17}H_{17}O_2N$ 3-Benzoylamino-phenyl-*n*-propyl ketone (MORGAN and HICKIN-BOTTOM), 1884.
- $C_{17}H_{15}O_2AS$ Hydroxyphenyl- α -naphthylmethylarsonium hydroxide, bromocamphorsulphonate of (BURROWS and TURNER), 432.
- $C_{17}H_{17}ON$ Methyl anilino-*m*-opianate (FARGHER and PERKIN), 1741.
- p*-Toluidino-*m*-opianic acid (FARGHER and PERKIN), 1739.
- $C_{17}H_{15}O_2N_2$ Dianilinoacetylacetone (MORGAN and DREW), 622.
- Malondibenzylamide (BACKES, WEST, and WHITELEY), 370.
- $C_{17}H_{18}O_2N_2$ $\alpha\alpha'$ -Dihydroxyglutardianilides (INGOLD), 323.
- Opianic acid phenylmethylhydrazones (FARGHER and PERKIN), 1743.
- $C_{17}H_{17}ON$ Benzoyl-*n*-butylaniline (MILLS, HARRIS, and LAMBOURNE), 1298.
- $C_{17}H_{17}O_2N$ 4-Dimethylamino-2-acetoxybenzhydrol (KRISHNA and POPE), 287.
- $C_{17}H_{15}O_2N_2$ *p*-Nitrobenzaldoxime-*N*-*p*-diethylaminophenyl ether (BARROW and GRIFFITHS), 215.
- $C_{17}H_{15}N_2Cl$ 6(7)-Chloro-7(6)-methylcamphanoquinoxaline (MORGAN and CHALLENGER), 1540.
- $C_{17}H_{15}O_2N_2$ Di-*p*-nitrophenylhydrazinoacetylacetone (MORGAN and DREW), 621.
- $C_{17}H_{17}ON$ Anilinomethylene-epicamphor (PERKIN and TILLEY), 1100.
- Benzylidene-*dl*-piperitonoexime (KRAO and SMITH), 788.
- $C_{17}H_{17}IAS$ Phenyl- γ -phenylpropylmethylarsine methiodide (BURROWS and TURNER), 431.
- $C_{17}H_{15}O_2N_2$ 1:3-Dimethylindole-2-carboxyacetalylamide (KERMACK, PERKIN, and ROBINSON), 1637.
- $C_{17}H_{15}O_2N$ Ethyl- α -cyano- α -butane- $\alpha\beta\gamma\delta$ -tetracarboxylate (INGOLD), 348.

17 IV

- $^{17}H_{15}O_2NCl$ β -Phthalimino- β -phenylpropionyl chloride (McKENZIE and BARROW), 78.
- $^{17}H_{15}O_2N_2S_2$ Tetranitrodithiomesoxotoluidides (NAIK), 1235.
- $^{17}H_{15}O_2N_2Br$ Dithydroynaphthaldehyde phenylhydrazones (MORGAN and VINING), 178.
- $^{17}H_{15}O_2N_2Br_2$ Dibromomalonbromotoluidides (BACKES, WEST, and WHITELEY), 376.
- $^{17}H_{15}O_2N_2S_2$ $\alpha\gamma$ -Disulphidoacetonedicarboxydianilide (NAIK), 1240.
- $^{17}H_{15}O_2N_2Br_2$ Bromomalon-4-bromo-*o*-toluidide (BACKES, WEST, and WHITELEY), 377.
- $^{17}H_{16}O_2N_2Br_2$ Dibromomalondibenzylamide (BACKES, WEST, and WHITELEY), 371.
- Dibromomalon-*p*-toluidide (BACKES, WEST, and WHITELEY), 376.
- Malonbromotoluidides (BACKES, WEST, and WHITELEY), 376.
- $^{17}H_{16}O_2N_2S$ Toluene-*p*-sulphonyl-1:4-naphthylenediamine (MORGAN and GRIST), 604.
- $^{17}H_{15}O_2N_2S_2$ Dithiomesoxodibenzylamide (NAIK), 384.
- Dithiomesoxotoluidides (NAIK), 1235.

- $C_{17}H_{19}O_4NCl$ Phenylchloroacetyl-L-tyrosine (SHIMOMURA and COHEN), 1824.
 $C_{17}H_{17}O_4N_2Cl$ Diacetyl derivative of 4'-nitrobenzene-5-azo-6-chloro-2,4-tolylene-diamine (MORGAN and JONES), 188.
 $C_{17}H_{17}O_2N_2Br$ Bromomalondibenzylamide (BACKES, WEST, and WHITELEY), 370.
 Bromomalon-*p*-toluidide (BACKES, WEST, and WHITELEY), 375.
 $C_{17}H_{17}O_4N_2Cl$ Diacetyl derivative of benzene-5-azo-6-chloro-2,4-tolylene-diamine (MORGAN and JONES), 188.

C₁₈ Group.

- $C_{18}H_{16}O_5$ Piperonylidene derivative of 5-hydroxy-4-methoxy-*o*-tolyl methyl ketone (FARGHER and PERKIN), 1733.
 $C_{18}H_{16}O_5$ Benzylidene derivative of 4:5-dimethoxy-*o*-tolyl methyl ketone (FARGHER and PERKIN), 1732.
 $C_{18}H_{18}O_6$ Methyl 2:4'-dimethoxy-3-methylbenzophenone-6-carboxylate (SIMONSEN and RAU), 1346.
 $C_{18}H_{18}O_6$ Benzoyloxymethylene-epicamphor (PERKIN and TITLEY), 1099.
 $C_{18}H_{30}O_2$ Linolenic acid, and its salts (COFFEY), 1306; oxidation of (COFFEY), 1409.
 $C_{18}H_{32}O_2$ Linolic acid, oxidation of (COFFEY), 1408.

18 III

- $C_{18}H_{15}O_4N_4$ "Diacetylhydrazide" of γ -6:6'-dinitrodiphenic acid (KENNER and STUBBINGS), 600.
 $C_{18}H_{14}ON$ Cinnamoylaminoquinolines (HAMER), 1437.
 $C_{18}H_{19}O_4N$ Methyl β -phthalimino- β -phenylpropionate (MCKENZIE and BARROW), 74.
 $C_{18}H_{15}O_4Cl_3$ 3,3,3-Trichloro-4:4'-dihydroxy- α -di-*m*-tolylethane-5:5'-dicarboxylic acid, and its calcium salt (ATMCHANDANI and MELDRUM), 209.
 $C_{18}H_{14}O_4N_2$ γ -6:6'-Diacetylamino-diphenic acid (KENNER and STUBBINGS), 600.
 $C_{18}H_{16}O_4N_2$ Ethyl γ -6:6'-dinitrodiphenate (KENNER and STUBBINGS), 599.
 $C_{18}H_{14}O_4N_4$ Dinitro-2:3:6:7-tetramethoxyanthraquinonedimide (KEFFLER), 1481.
 $C_{18}H_{17}O_4N$ *p*-Toluidino-4:5-dimethoxyphthalonic acid, *p*-toluidine salt (FARGHER and PERKIN), 1739.
 $C_{18}H_{17}O_4N_2$ Diacetyl derivative of 6-nitro-*m*-xylene-4-azoresorcinol (PEARMAN), 717.
 $C_{18}H_{16}O_4N_4$ 2:3:6:7-Tetramethoxyanthraquinonedimide (KEFFLER), 1480.
 $C_{18}H_{15}O_4N_4$ Ethylidenebis-*p*-nitrophenylacetamide (GUPTA), 302.
 $C_{18}H_{15}O_4N_2$ *o*-Azoxy-*p*-methoxyphenylacetic acid (KERMACK, PERKINS, and ROBINSON), 1631.
 $C_{18}H_{18}N_2Cl_2$ Tetramethylenebis-2-chloro-4:5-diaminotoluene (MORGAN and CHALLENOR), 1541.
 $C_{18}H_{19}IAS$ Phenyl- α -naphthylmethylarsine methiodide (BURROWS and TURNER), 432.
 $C_{18}H_{20}O_2N_2$ 6:6'-Diacetylamino-2:2'-ditolyl (KENNER and STUBBINGS), 600.
 Methylmalonotoluidides (NAIK), 1238.
 $C_{18}H_{21}O_2N_2$ *m*-4-Xylyl-*n*-propyl ketone *p*-nitrophenylhydrazone (MORGAN and HICKINBOTTOM), 1889.
 $C_{18}H_{23}N_2Cl$ 3-Amino-2-methyl-*N*-methyltetrahydroquinolinophenazine methochloride (COHEN and CRABTREE), 2065.
 $C_{18}H_{25}O_2N$ Phenylacetylamino-camphor (FORSTER and SAVILLE), 791.
 $C_{18}H_{25}O_2Cl$ 1-Menthyl *dl*-phenylchloroacetate (SHIMOMURA and COHEN), 1818.

- $C_{15}H_{19}O_2Br$ *l*-Menthyl *dl*-phenylbromoacetate (SHIMOMURA and COHEN), 1820.
 $C_{15}H_{27}O_5N$ Ethyl ω -cyano- ω' -carboxy- ω'' -methylmethanetriacetate (INGOLD and PERREN), 1599.
 $C_{17}H_{35}O_8Br_2$ Hexabromostearic acid, and its salts (COFFEY), 1306.
 $C_{18}H_{31}O_5N_3$ Tri(diethylaminomethyl) glyceryl ether (McLEOD and ROBINSON), 1473.

18 IV

- $C_{15}H_{19}O_4N_2S_2$ $\beta\beta'$ -Di-*p*-nitrobenzoyldiethyl disulphide (BENNETT and WHINCOP), 1861.
 $C_{15}H_{19}ONCl$ Phenylchloroaceto-*d*-bornylamide (SHIMOMURA and COHEN), 1823.
 $C_{16}H_{21}ONCl$ Phenylchloroaceto-*l*-menthylamide (SHIMOMURA and COHEN), 1823.

C₁₀ Group.

- $C_{10}H_{13}N$ 5-Phenylacridine, picrates of (BASSETT and SIMMONS), 417.
 $C_{10}H_6O_6$ Acetyl derivative of 1:6-dimethoxy-2-methylantraquinone (SIMONSEN and RAU), 1347.
 $C_{10}H_6O_3$ Fluoran derivative of citraconic anhydride (KRISHNA and POPE), 291.
 $C_{10}H_{12}O_4$ Phenolcitraconcin dimethyl ether (KRISHNA and POPE), 290.
 $C_{10}H_8O_4$ 4:6:3':4'-Tetramethoxy-3-phenylchroman-2-one (NIERENSTEIN), 167.
 $C_{10}H_8O_2$ 2-Hydroxy-4:6:3':4'-tetramethoxy-3-phenylchroman (NIERENSTEIN), 168.
 $C_{10}H_{12}O_3$ *l*-Bornyl α -hydroxy- β -phenylpropionates (WREN and WRIGHT), 802.
 $C_{10}H_{12}O_3$ *l*-Menthyl-*d*-atrolactinate (WREN and WRIGHT), 800.
 $C_{10}H_{12}O_3$ *l*-Menthyl-*l*- α -hydroxy- β -phenylpropionate (WREN and WRIGHT), 802.
 $C_{10}H_{16}O_{11}$ Hexamethyl methylcellobioside (HAWORTH and HIRST), 198.

19 III

- $C_{19}H_{19}NBr$ Anthranlypyridinium bromide (+ H_2O) (BARNETT and COOK), 907.
 $C_{19}H_{19}ON$ Anthranlypyridinium hydroxide, salts of (BARNETT and COOK), 907.
 $C_{19}H_{19}ON_2$ Cinnamoylaminoquinaldines (HAMER), 1437.
 $C_{19}H_{19}O_4N_2$ Anhydride of 2-carboxyindole-3-acetanilide and acetic acid (KERMACK, PERKIN, and ROBINSON), 1625.
 $C_{19}H_{19}ON_2$ 6-Benzoylamino-tetrahydrocarbazole (PERKIN and PLANT), 1833.
 $C_{19}H_{19}O_3N_2$ *cyclo*Pentanone-3:4-dicarboxyanilide (INGOLD), 350.
 $C_{19}H_{19}O_3N$ 4'-Dimethylamino-2-hydroxydistyryl ketone, and its additive products (HEILBRON and BUCK), 1500, 1515.
 $C_{19}H_{19}O_3N_2$ Acetonedicarboxyditoluides (NAIK), 1241.
 $C_{19}H_{19}O_3N_2$ Dianilic acid from methanetriacetic acid (INGOLD), 353.
 $C_{19}H_{19}O_3N_2$ Hydroxylamino-derivative of 4'-dimethylamino-2-hydroxy-distyryl ketone (HEILBRON and BUCK), 1518.
 $C_{19}H_{19}O_3N_2$ $\alpha\alpha'$ -Dihydroxyglutardi-*p*-toluides (INGOLD), 323.
 $C_{19}H_{19}O_3N_2$ Hydroxylamino-derivative of 4'-dimethylamino-2-hydroxy-distyryl ketoxime (HEILBRON and BUCK), 1518.
 $C_{19}H_{19}O_3N_2$ Nitrobenzaldoxime-*N-p*-di-*n*-propylaminophenyl ether (BARROW and GRIFFITHS), 215.
 $C_{19}H_{19}O_3N_2$ Ethyl antipyrilaminodiacetate (FARGHER and KING), 297.

$C_{15}H_{17}O_2Br$ *l*-Menthyl *dl*- α -bromo- β -phenylpropionate (SHIMOMURA and COHEN), 1821.

19 IV

$C_{15}H_{15}ONBr$ Anthranilpyridinium perbromide (BARNETT and COOK), 907.

$C_{15}H_{17}ON_2I$ Cinnamoylaminoquinoline methiodides (HAMER), 1437.

$C_{15}H_{15}O_2N_2S_2$ α , γ -Disulphidoacetonedicarboxyditoluidides (NAIK), 1241.

$C_{15}H_{15}ON_4I$ Phenylhydrazine derivative (+ $3H_2O$) of substance $C_7H_5O_2I$ (COLLIE and REILLY), 1554.

$C_{15}H_{25}O_4NCl$ Ethyl ester of phenylchloroacetyl-*L*-tyrosine (SHIMOMURA and COHEN), 1824.

 C_{20} Group.

$C_{20}H_{10}O_4$ Dinaphtha-1:7:1':7'-diquinone (MORGAN and VINING), 1707.

$C_{20}H_{12}N_2$ Aminophenanthraphenazines (WATSON and DUTT), 1215.

$C_{20}H_{14}O_4$ Phenolphthalein, preparation of (WARD), 850.

1:7:1':7'-Tetrahydroxydinaphthyl (MORGAN and VINING), 1712.

$C_{20}H_{14}N_4$ Diaminophenanthraphenazines (WATSON and DUTT), 1215.

$C_{20}H_{12}N_6$ 2:7:11-Triaminophenanthraphenazine, and its hydrochloride (WATSON and DUTT), 1217.

$C_{20}H_{15}O$ Triphenylvinyl alcohol, constitution of (MCKENZIE and BOYLE), 1131.

$C_{20}H_{16}N_4$ 2:7-Diaminodihydrophenanthraphenazine, and its hydrochloride (WATSON and DUTT), 1216.

$C_{20}H_{17}N$ 9-Phenylamino-9:10-dihydroanthracene (BARNETT and COOK), 909.

$C_{20}H_{15}O_5$ *m*-Opianic anhydride (FARGHER and PERKIN), 1742.

$C_{20}H_{24}O_5$ ω -Hydroxy-3:4:2':4':6'-pentamethoxy- α -diphenylpropan- β -on (NIERENSTEIN), 166.

$C_{20}H_{14}N_4$ Base, from formaldehyde and 4:6-diamino-*m*-xylene (PEARMAN), 720.

$C_{20}H_{25}O_{11}$ Heptamethyl methylcellobioside (HAWORTH and HESSE), 149.

20 III

$C_{20}H_{10}Cl_2S_2$ Substance, from α -chloronaphthalene and sulphur chloride (EAT), 1964.

$C_{20}H_{12}O_4N_2$ Dinaphtha-1:7:1':7'-diquinonedioxime (MORGAN and VINING), 1711.

$C_{20}H_{14}O_2N_4$ 2:7-Dihydroxydihydrophenanthraphenazine (WATSON and DUTT), 1217.

$C_{20}H_{14}ClBi$ Di- α -naphthylchlorobismuthine (CHALLENGER and ALLIBONE), 918.

$C_{20}H_{15}O_2N_2$ 9-Nitrophenylamino-9:10-dihydroanthracenes (BARNETT and COOK), 909.

$C_{20}H_{18}O_2N_2$ *n*-Butyrophenone-azo- β -naphthols (MORGAN and HICKINBOTTOM), 1884.

$C_{20}H_{15}ON_2$ *n*-Butyrophenone-3-azo- β -naphthylamine (MORGAN and HICKINBOTTOM), 1884.

$C_{20}H_{15}O_4N_2$ 6-Acetylamino-*m*-xylene-4-azo- β -naphthol (PEARMAN), 718.

$C_{20}H_{20}BrAs$ Phenyl- α -naphthylmethylallylarsonium bromide (BERNARD and TURNER), 434.

$C_{20}H_{21}O_4N$ 4'-Dimethylamino-2-methoxydistyryl ketone, and its soluble compounds (HEILBRON and BUCK), 1509.

$C_{20}H_{21}O_4N_2$ 2:6-Dimethoxy-3:7-diethoxyanthraquinonedimide (EAT), 1482.

- $C_{22}H_{19}ON_2$ 4-Amino-1-naphthylaminocamphor, and its hydrochloride (FORSTER and SAVILLE), 797.
 $C_{20}H_{24}O_2N_2$ Quinine, hexabromostearate of (COFFEY), 1309.
 $C_{20}H_{24}O_2N_2$ Hydroxylamino-derivative of 4'-dimethylamino-2-methoxy-distyryl ketoxime (HEILBRON and BUCK), 1518.

20 IV

- $C_{12}H_{10}O_2N_2S$ Naphthalene- α - and - β -sulphonyl-1:4-naphthylenediamine (MORGAN and GRIST), 605.
 $C_{23}H_{19}ON_2I$ Cinnamoylaminoquinadine methiodides (HAMER), 1437.

C₂₁ Group.

- $C_{21}H_{16}O_5$ Resorcinolcoumerein (KRISHNA), 1424.
 $C_{21}H_{16}O_4$ Ethyl benzophenone-2:4:2':4'-tetracarboxylate ketodilactone (MILLS and NODDER), 2101.
 $C_{21}H_{18}O_5$ Diacetyl derivative of phenolcitraconein (KRISHNA and POPE), 290.
 $C_{21}H_{16}N$ 9-Phenylmethylamino-9:10-dihydroanthracene (BARNETT and COOK), 912.
 9-Tolylamino-9:10-dihydroanthracenes (BARNETT and COOK), 910.
 $C_{21}H_{20}O_5$ Phenolcoumerein, and its salts (KRISHNA), 1420.
 $C_{21}H_{16}BI$ Tri-*m*-tolylbismuthine (CHALLENGER and ALLPRESS), 920.
 $C_{21}H_{16}O_4$ Phenolcitraconein diethyl ether (KRISHNA and POPE), 291.
 $C_{21}H_{20}O_4$ Methylonebiscyclopentanespirocyctohexane-3:5-dione (NORRIS and THORPE), 1208.

21 III

- $H_{12}O_4Br_4$ Tetrabromophenolcoumerein (KRISHNA), 1424.
 $H_{12}O_4Br_4$ Tetrabromoresorcinolcoumerein (KRISHNA), 1425.
 $H_{12}N_2Cl$ 5-Chloro-2:3-diphenyl-6-methylquinoxaline (MORGAN and GLOVER), 1706.
 6(7)-Chloro-2:3-diphenyl-7(6)-methylquinoxaline (MORGAN and CHALLENGER), 1539.
 $H_{10}O_4Br_2$ Phenoldibromocoumerein (KRISHNA), 1424.
 $H_{17}O_2N$ 9-*o*-Carboxyphenylamino-9:10-dihydroanthracene (BARNETT and COOK), 910.
 $H_{19}O_2N$ 8-Dimethylamino-3-hydroxy-9-phenylxanthen (KRISHNA and POPE), 288.
 $H_{17}N_2I$ 1:1'-Dimethylisocyanine iodide (HAMER), 1439.
 $H_{20}O_2Cl$ Ethyl di-*n*-chlorobenzylmalonate (KENNER and WITHAM), 1460.
 $H_{22}N_2I$ Amino-1:1'-dimethylisocyanine iodides (HAMER), 1443.
 $H_{21}O_2N$ Acetyl derivative of 4'-dimethylamino-2-hydroxydistyryl ketone (HEILBRON and BUCK), 1509.
 $H_{22}O_2N_2$ Strychnine, hexabromostearate of (COFFEY), 1309.
 $H_{23}ON$ β -Naphthylaminomethylene-epicamphor (PERKIN and TILLEY), 1100.
 H_2ON_2 *pp'*-Tetramethyldiaminodistyryl ketone (HEILBRON and BUCK), 1514.
 $H_2O_2N_2$ Semicarbazone of 4'-dimethylamino-2-methoxydistyryl ketone (HEILBRON and BUCK), 1519.
 H_2ON 2-Benzoylamino-1:4-di-*n*-butylbenzene (MORGAN and HICKINBOTTOM), 1893.
 $H_2O_2N_2$ Semicarbazide derivative of 4'-dimethylamino-2-hydroxy-distyryl ketone semicarbazone (HEILBRON and BUCK), 1519.

C₂₂ Group.**C₂₂H₁₀O₄** 1:2-Phthaloylanthraquinone (FAIREBOURNE), 1580.**C₂₂H₂₄Si₂** *dl*-Diphenyldiethyldipropylsilicoethane (KIPPING), 648.**22 III****C₂₂H₁₅ON₃** 1-Methoxy-2-methylphenanthraphenazine (SIMONSEN and RAU), 1343.**C₂₂H₁₉O₂N** β -Benzoylamino- β -phenylpropiophenone (McKENZIE and BARROW), 73.**C₂₂H₂₁ON** 6-Dimethylamino-3-hydroxy-9-phenyl-2-methylxanthen (KRISHNA and POPE), 288.**C₂₂H₂₁O₃N** 4-Dimethylamino-2-benzoyloxybenzhydrol (KRISHNA and POPE), 288.**C₂₂H₂₂O₂N₂** Butyro-2:4-dimethylphenone-5-azo- β -naphthol (MORGAN and HICKINBOTTOM), 1890.**C₂₂H₂₄O₄S₂** 1:1'-Dicyclohexanespiro-3:5:3':5'-tetraketo-4:4'-bisdithiodicyclohexylene-2:2':6:6'-bisdisulphide (NAIK), 1240.**C₂₂H₂₃O₃N₁** *p*-Nitrobenzeneazophenylaminocamphor (FORSTER and SAVILLE), 796.**C₂₂H₂₆O₄N₂** Mitraversine, and its hydrochloride (FIELD), 891.**C₂₂H₃₁O₅N** Mitragnyne, and its salts (FIELD), 888.**22 IV****C₂₂H₁₈O₂N₂Cl₂** Ethyl $\alpha\alpha$ -bis-3-chloro-2-cyanobenzylacetacetate (KESNER and WITHAM), 1459.**C₂₂H₂₄O₄N₂S₂** Di-*p*-toluenesulphonyl-4:6-diamino-*m*-xylene (PEARMAN), 719.**C₂₂H₂₃O₄N₂S** *p*-Sulphobenzeneazophenylaminocamphor (FORSTER and SAVILLE), 796.**C₂₂H₂₆O₄N₂S₂** Methylmalonomono-*o*-toluidide disulphide (NAIK), 1232.**C₂₃ Group.****C₂₃H₃₂O₄** Methylenebis(cyclohexanespirocyclohexane-3:5-dione (NORRIS and THORPE), 1206.**23 III****C₂₃H₁₂O₆S₂** Methylene bis-(1)thionaphtha-4-oxycoumarin (SMILES and McCLELLAND), 1316.**C₂₃H₁₇O₂N** β -Phthalimino- β -phenylpropiophenone (McKENZIE and BARROW), 75.**C₂₃H₁₉O₂N₂** β -Phthalimino- β -phenylpropionanilide (McKENZIE and BARROW), 74.**C₂₃H₁₉O₄N** β -Benzoyl- α -phenylethylphthalamic acid (McKENZIE and BARROW), 75.**C₂₃H₂₁O₂N₂** Benzylidenebisphenylacetamide (GUPTA), 300.**C₂₃H₂₄O₃N₂** Benzoyl derivative of phenylcamphorimide (FORSTER and SAVILLE), 792.**C₂₃H₂₄O₂N₂** *p*-Benzoylamino-phenylaminocamphor (FORSTER and SAVILLE), 795.**23 IV****C₂₃H₁₇O₁₃N₈S** Hexanitro-derivative of oxythiomesoxo- α -naphthylamide (NAIK), 1236.**C₂₃H₁₃O₁₀N₆S₂** Tetranitrodithiomesoxonaphthylamides (NAIK), 1238.**C₂₃H₁₄O₂N₂S₂** Dithiomesoxonaphthylamides (NAIK), 1236.**C₁₃H₂₂ON₂I** Acetylamino-1:1'-dimethylisocyanine iodides (HARRIS), 1441.

C₂₄ Group.

- C₂₄H₁₆N₂** Dicarbazyls, isomeric (PERKIN and TUCKER), 221.
C₂₄H₁₆N 9-*β*-Naphthylamino-9:10-dihydroanthracene (BARNETT and COOK), 911.
C₂₄H₂₁O₄ Phenolcoumarcin trimethyl ether (KRISHNA), 1423.
C₂₄H₂₅Si₂ *dl*-Dibenzylidiethylidipropylsilicoethane (KIPPING), 649.

24 III

- C₂₄H₂₀N₂Br₂** 9:10-Dihydroanthraquinylidipyridinium dibromide (BARNETT and COOK), 904.
C₂₄H₂₀N₂Br₄ 9:10-Dihydroanthraquinylidipyridinium perbromide (BARNETT and COOK), 905.
C₂₄H₂₀O₂N₂ 9:10-Dihydroanthraquinylidipyridinium dihydroxide, salts of (BARNETT and COOK), 906.
C₂₄H₂₄BrAs Phenyl-*α*-naphthylbenzylmethylarsonium bromide (BURROWS and TURNER), 435.
C₂₄H₂₄IAS Phenyl-*α*-naphthylbenzylmethylarsonium iodide (BURROWS and TURNER), 436.
C₂₄H₂₄OAs Phenyl-*α*-naphthylbenzylmethylarsonium hydroxide, salts of (BURROWS and TURNER), 435.
C₂₄H₂₄O₂N₂ Phenylethylidenebisphenylacetamide (GUPTA), 302.
C₂₄H₂₄O₂N₂ Anisylidenebisphenylacetamide (GUPTA), 301.

24 IV

- C₂₄H₂₀O₂N₂S** Diamino-15-hydroxyphenanthranaphthazine-13-sulphonic acids (WATSON and DUTT), 1218.
C₂₄H₁₇ON₂S 1-Phenyl-5-methylbenzothiazole-4-azo-*β*-naphthol (MORGAN and WEBSTER), 1073.
C₂₄H₂₀O₂Si₂ Dibenzylidiethylidipropylsilicoethanedisulphonic acid, *l*-menthylamine salt (KIPPING), 652.

C₂₅ Group.

- C₂₅H₂₀O₄** Diacetyl derivative of phenolcoumarcin (KRISHNA), 1423.

25 III

- C₂₅H₂₀ON** 8-Dimethylamino-11-phenyl-*β*-naphthaxathion (KRISHNA and POPE), 288.
C₂₅H₂₀OAs Homopiperonylphenyl-*α*-naphthylmethylarsonium hydroxide, salts of (BURROWS and TURNER), 434.
C₂₅H₂₄O₂N₂ Cinnamylidenebisphenylacetamide (GUPTA), 301.
C₂₅H₂₄ON₂ 4'-Dimethylamino-2-hydroxydistyryl ketone phenylhydrazone (HEILBRON and BUCK), 1519.
C₂₅H₂₀O₂N₂ 4:6:3':4'-Tetramethoxy-3-phenylchroman-2-one phenylhydrazone (NIERENSTEIN), 167.

25 IV

- C₂₅H₂₀OBAs** Phenacylphenyl-*α*-naphthylmethylarsonium bromide (BURROWS and TURNER), 434.
C₂₅H₂₀O₂BrAs Homopiperonylphenyl-*α*-naphthylmethylarsonium bromide (BURROWS and TURNER), 434.

C₂₆ Group.

- C₂₆H₂₀S₂** Dibenzylthianthron (RÄV), 1965.
C₂₆H₂₁N 9-Diphenylamino-9:10-dihydroanthracene (BARNETT and COOK), 912.
C₂₆H₂₁N₂ 9-*p*-Benzeneazophenylamino-9:10-dihydroanthracene (BARNETT and COOK), 911.

26 III

$C_{26}H_{18}O_6N_4$ Dianilide of γ -6:6'-dinitrodiphenic acid (KENNER and STUBBINGS), 599.

$C_{24}H_{20}N_4S_4$ 3:6-Dithio-1:2:4:5-tetraphenylhexahydro-1:2:4:5-tetrazine (NAIK), 1169.

$C_{24}H_{20}ON_2$ 4'-Dimethylamino-2-methoxydistyryl ketone phenylhydrazine, and its pyridine additive compound (HEILBRON and BUCK), 1520.

$C_{24}H_{34}O_2N_2$ Camphorylamino-phenyliminocamphor (FORSTER and SAVILLE), 795.

26 IV

$C_{26}H_{20}O_2N_4S_2$ Trisulphidobisbenzanilide (NAIK), 1169.

$C_{24}H_{22}O_4N_4S_2$ Benzene-1:3-disulphonylbis-1:4-naphthylenediamide (MORGAN and GRIST), 606.

$C_{24}H_{22}O_4N_4S_4$ 2:7-Diaminophenanthraquinonediphenylhydrazine-*pp'*-disulphonic acid (WATSON and DUTT), 1221.

$C_{26}H_{27}O_4N_4S_2$ *p*-Sulphobenzeneazonaphthylaminocamphor (FORSTER and SAVILLE), 797.

 C_{27} Group.

$C_{27}H_{13}O_2Cl_4$ Lactone of 7:8-dibenzoyloxy-2:4-bis-trichloromethyl-6:8-trichloro- α -hydroxyethyl-1:3-benzodioxine-5-carboxylic acid (ALIM-CHANDANI and MELDRUM), 207.

 C_{28} Group.

$C_{28}H_{22}O_8$ 1:7:1':7'-Tetra-acetoxydinaphthyl (MORGAN and VINING), 1718.

28 III

$C_{28}H_{23}O_2N$ 6-Dimethylamino-3-benzoyloxy-9-phenylxanthen (KRISHNA and POPE), 288.

$C_{24}H_{23}N_4Cl$ 2:7-Diamino-11:4'-dimethylflavinduline chloride (WATSON and DUTT), 1219.

$C_{28}H_{24}O_4N_4$ Tetra-acetyl derivative of 2:7-diaminodihydrophenanthrazenazine (WATSON and DUTT), 1217.

28 IV

$C_{28}H_{19}O_4N_4Cl$ 2:7-Dinitro-11:4'-dimethylflavinduline chloride (WATSON and DUTT), 1218.

 C_{30} Group.

$C_{30}H_{16}O_4N_2$ Camphoryl-1-aminonaphthyl-4-iminocamphor (FORSTER and SAVILLE), 798.

30 IV

$C_{30}H_{22}O_4N_4S_2$ Naphthalenedisulphonylbis-1:4-naphthalenediamines (MORGAN and GRIST), 606.

$C_{30}H_{26}ON_4I$ Cinnamoylamino-1:1'-dimethylisocyanine iodides (HAWK), 1440.

 C_{31} Group.

$C_{31}H_{11}O_4$ Dibenzoyl derivative of phenolcitraconein (KRISHNA and POPE), 290.

 C_{32} Group.

$C_{32}H_{10}O_4N_2$ *pp'*-Bisiminocamphordiphenylamine (B. K. and M. SINGH and LAL), 1975.

$C_{32}H_{20}O_4N_2$ *pp'*-Diphenylenebisaminocamphor (B. K. and M. SINGH and LAL), 1974.

32 IV

$C_{32}H_{30}O_4N_2S_2$ Methylmalonanilide disulphide (NAIK), 384.

C₃₄ Group.

$C_{34}H_{34}O_4$ Substance, from magnesium phenyl bromide and diphenylchloroacetyl chloride (McKENZIE and BOYLE), 1138.

34 III

$C_{34}H_{30}O_2N_2$ *oo'*-Ditolylenebisiminocamphor (B. K. and M. SINGH and LAL), 1973.

$C_{34}H_{30}O_4N_2$ *oo'*-Dimethoxydiphenylenebisiminocamphor (B. K. and M. SINGH and LAL), 1974.

34 IV

$C_{34}H_{22}O_{10}N_6S_2$ Phenanthraquinonebis(2'-azo-7'-amino-1'-hydroxynaphthalene-3'-sulphonic acids (WATSON and DUTT), 1219.

$C_{34}H_{24}O_4N_4S_2$ Malondimethylanilide disulphide (NAIK), 384.

C₃₆ Group.

$C_{36}H_{36}O_{12}N_{12}S_2$ Dodecanitro-derivative of methylmalono-*p*-toluidide disulphide (NAIK), 1238.

$C_{36}H_{38}O_4N_4S_2$ Methylmalonotoluidide disulphides (NAIK), 1238.

C₄₀ Group.

$C_{40}H_{20}O_8N_8S_2$ 11-Aminophenanthraphenazine-2:7-bis(2'-azo-7'-amino-1'-hydroxynaphthalene-3'-sulphonic acid (WATSON and DUTT), 1220.

$C_{40}H_{20}O_8N_8S_2$ Dihydrophenanthraphenazine-2:7-bis(2'-azenaaphthionic acid (WATSON and DUTT), 1220.

C₄₂ Group.

$C_{42}H_{30}O_7$ Tribenzoyl derivative of phenolcoumarin (KRISHNA), 1423.

C₄₄ Group.

$C_{44}H_{26}O_{10}N_{16}$ Dinaphtha-1:7:1':7'-diquinonetetra-2:4-dinitrophenylhydrazine (MORGAN and VINING), 1712.

$C_{44}H_{42}O_2N_8$ *pp*-Diphenylenebisazophenylaminocamphor (FOESTER and SAVILLE), 797.

C₄₈ Group.

$2_{18}H_{16}OSi_4$ Octaphenylsilicotetrane oxide (KIPPING and SANDS), 840.

$2_{18}H_{16}O_2Si_4$ Octaphenylsilicotetrane oxide, rhomboidal (KIPPING and SANDS), 844.

$2_{18}H_{16}I_2Si_4$ Octaphenyldi-iodosilicotetrane (KIPPING and SANDS), 830.

ERRATA.

VOL. 115 (TRANS., 1919).

Page Line
1386 6* for "latter" read "heat of formation of methane."

VOL. 117 (TRANS., 1920).

Page 56 Table V in third column for $\left\{ \begin{array}{c} "5.74" \\ 6.62 \\ 5.15 \end{array} \right\}$ read $\left\{ \begin{array}{c} "57.4" \\ 66.2 \\ 51.5 \end{array} \right\}$.

Page Line
83 1* for " $C_5H_{10}O_2N_2S$ " read " $C_5H_{10}O_4N_2S$."
345 21* " "oxide, a little water" read "oxide and a little water."
348 6* " "citronellal" read "citronellol."
350 2 " "peconal" read "peconol."
475 13 " "s" read "8."
475 14 " "9 η s" read "9 η S."
475 2* }
476 1 } " "0.15 cm." read "0.1588 cm."
476 15 }
478 10 " "6.69" read "6.69 \times 19.4."
646 26 " "Mr. E. A. Perren" read "Messrs. R. Craven and E. A. Perren."
646 27 " "his" read "their."
648 17 " "N/10-KMnO₄" read "N/10-KMnO₄ equivalent to."
648 20 " "0.03994" read "0.03904."
661 12 " "sodium sulphate" read "sodium hydrogen sulphate."
832 6 " "lead acetate" read "sodium plumbite."

965 " formule V. and VI. read $\begin{array}{c} \text{MeO} \diagup \text{CO}_2\text{H} \\ \diagdown \text{OMe} \end{array}$ and $\begin{array}{c} \text{MeO} \diagup \text{CO}_2\text{H} \\ \diagdown \text{HO} \end{array}$
respectively.
1024 6* " "positive" read "negative."
1026 16* the formula should be " $3K_2[Fe(CN)_6], K_2[Fe(CN)_6H_4O]$."
1218 19 col. 2 for "167.90" read "157.90."
1219 diagram insert "v" values at end of horizontal lines, namely, from below upwards "100, 90, 80, 70, 60."
1270 7* for " $C_{12}H_{12}O_3N_4$ " read " $C_{13}H_{12}O_3N_4$."
1276 22 " "N=17.37." $C_{13}H_{12}O_3N_4$ requires N=17.73" read "N=16.35." $C_{20}H_{18}O_6N_5$ requires N=16.4."
1560 4* " "2 β " read "2 θ ."
1560 13* " "2 θ " read "2 β ."
1560 13* " "2 β " read "2 θ ."

VOL. 119 (TRANS., 1921).

29 9* }
30 3* } " "Shenstone" read "Stenhouse."
50 14 " "SrCS₂.8H₂O" read "SrCS₂.8H₂O."
63 4 " "salts in millimols." read "salts and soaps in millimols. per cent."
63 }
64 } in tables I, II, V, VI, and VIII after "millimols." insert "per cent."
65 }
66 }
68 15 for "renewal" read "reversal."

* From bottom.

ERRATA (*continued*).

VOL. 119 (TRANS., 1921).

Page	Line	
307		for "denominator of equation" read " $4(Vr)^2 - (V^2 + r^2)$."
389	8*	"cis-Citraconatodiethylenediamine" read "cis-Citraconatodiethylenediaminecobaltic."
1390 1391 1392	11	In equations (6), (7), (8) and in tables II, III, IV for " \log_e " read " \log_{10} ."
1590		
735	14	for "αγ-dicarboxy-α-methylglutaconate" read "αγ-dicarboxy-α-benzylglutaconate."
		"(C ₁₁ H ₁₀ O ₆) ₂ Ca" read "(C ₁₁ H ₈ O ₇) ₂ Ca."

* From bottom.

INDEX OF AUTHORS' NAMES.

TRANSACTIONS AND ABSTRACTS.

1921.

(Marked T., and A., i and A., ii respectively.)

A.

- anensen, D.** See *Fritz Foerster*.
- Abderhalden, Emil, and Andor Fodor,** researches on fermentation. VII. The influence of additions (toluene, chloroform, thymol, and also of neutral salts) on the fermentative decomposition of dipeptides by yeast extract, A., i, 481.
- Abderhalden, Emil,** relationship between adsorption and the dissolved condition. I. Adsorption of amino-acids, polypeptides, and egg-albumin by animal charcoal, A., ii, 21.
- Abderhalden, Emil, and Hans Hanovsky,** the influence of the structure and configuration of substrates (polypeptides) on ferment action, A., i, 547.
- Abderhalden, Emil, and H. Kürten,** the cleavage, by ferments, of polypeptides containing amino-acids which have not yet been found as cleavage products of proteins, A., i, 547.
- Abderhalden, Emil, and Arthur Weil,** action of lipase, A., i, 68.
- Adams, E. P.,** catalytic studies. VII. Catalysis of hydrogen peroxide by iodine ions, A., ii, 35.
- Adams, E. P.,** kinetics of the reaction between hydrogen peroxide and iodine, A., ii, 180.
- Adams, E. P.,** the influencing of catalysts and specifically active catalysts, A., ii, 542.
- Adams, Arthur,** the action of magnesium methyl iodide on mercurated aromatic ketones and on mercuric chloride, A., i, 629.
- Adams, Arthur,** nephelometric estimation of oxalic acid, A., ii, 419.
- Adams, C. L.** See *William Edward Farnar*.
- Adams, (Sir) William de Wiveleslie,** preliminary notice of, T., 529.
- Aboulenc, Jean.** See *Jean Baptiste Senderens*.
- Acé, Desider,** the oligodynamic action of metals, A., i, 147.
- Achard, Ch., and E. Feuillid,** detection of albumoses in blood plasma, serum solutions, and exudates, A., i, 380.
- Achard, Ch.,** albumoses of the cells and tissues, A., i, 380.
- Ackermann, Adolf,** microscopic forms of iron rust, A., ii, 511.
- Ackermann, Dankwart,** mytilitol, a naturally occurring cyclose, A., i, 764.
- Ackermann, Dankwart, and Friedrich Kutscher,** some methylated amino-acids and aporrhagnata, and their behaviour in the animal body, A., i, 499.
- Acton, Hugh William, and Harold King,** nephelometric estimation of quinine in blood, A., i, 474.
- Adam, A.,** influence of fever on the phosphoric acid content of (rabbit's) muscle, A., i, 529.
- Adam, Neil Kensington,** properties and molecular structure of thin films of palmitic acid on water. I., A., ii, 488.
- Adams, E. P.,** statistical mechanics and chemistry, A., ii, 628.
- Adams, Elliot Quincy,** the independent origin of actinium, A., ii, 8.
- Adams, Elliot Quincy, and Herbert L. Haller,** isocyanine dyes from 4-methylquinoline and its homologues, A., i, 53.
- Adams, Elliot Quincy,** kryptocyanines; a new series of photo-sensitising dyes, A., i, 129.
- Adams, Elliot Quincy.** See also *Louis A. Mikeska*.
- Adams, Leason H., and Erskine D. Williamson,** some physical constants of BB'-dichlorodiethyl sulphide, A., i, 494.

- Adams, Roger, H. B. Bramlet, and F. H. Tendick**, the action of the Grignard reagent on thiocyanates, A., i, 6.
- Adams, Roger, and Charles Shattuck Palmer**, the reactions of the arsines; condensation of primary arsines with aldehydes, A., i, 70.
- Adams, Roger, and E. H. Vollweiler**, [preparation of] allyl-*p*-aminobenzoate, A., i, 416.
- Adams, Roger**. See also **H. E. French and L. H. Ulich**.
- Adkins, Homer**. See **Loone Oyster**.
- Adler, Erich**, influence of external temperature on the lactacidogen content of frog's muscle. I. and II., A., i, 529.
influence of the season of the year on the lactacidogen content of frog's muscle, A., i, 529.
- Adler, Erich, and L. Günzburg**, influence of external temperature on the lactacidogen content of frog's muscle. I. and II., A., i, 529.
- Adler, Erich, and Salo Isaac**, influence of phosphorus poisoning on the lactacidogen content of frog's muscle, A., i, 529.
- Adler, Erich**. See also **Gustav Embden**.
- Adolf, Mona, and Wolfgang Pauli**, physico-chemical analysis of zirconium oxychlorides and zirconium oxide sols, A., ii, 700.
- Adriano, Felipe T.**, volumetric method for the estimation of lactose by alkaline potassium permanganate, A., ii, 284.
- Aguirreche, Fernando Díaz**. See **Antonio Madinaveitia**.
- Ahlberg, R.** See **J. M. Lovén**.
- Ajón, Guido**, volumetric estimation of potassium and its application to the analysis of fertilisers, A., ii, 61.
- Aktien Gesellschaft für Anilinfabrikation**, preparation of tetrahydronaphthalene, A., i, 333.
- Albrecht, Elemore**, branching relationship for Ra-C, Ac-C, rh-C, and the disintegration constant of the C' products, A., ii, 675.
- Aldinger, R.** See **Otto Fischer**.
- Aldous, Wilfrid Major**. See **Nevill Vincent Sidgwick**.
- Alessandri, Luigi**, certain nitronic derivatives, A., i, 570.
action of nitroso-derivatives on unsaturated compounds, A., i, 730.
- Alessandri, Luigi, and M. Passerini**, formyl and aldehydic derivatives of pyrroles and indoles, A., i, 592.
- Alexander, Jerome**, the zone of maximum colloidal; its relation to viscosity in hydrophile colloids, especially karaya gum and gelatin, A., ii, 310.
- Alimchaudani, Rupchand Lillaram, and Andrew Norman Meldrum**, derivatives of gallic acid. II. Gallic acid (and the cresotic acids) and chloral, T., 201.
- Allmand, Arthur John**. See **Robert Thomas Stanley Britton**.
- Allpress, Charles Frederick**. See **Frederick Challenger**.
- Alsberg, Carl Lucas**. See **Harold E. Woodward**.
- Alstine, Ernest van**, the determination of hydrogen-ion concentration by the colorimetric method and an apparatus for rapid and accurate work, A., i, 216.
- Amano, Umetsurō**. See **Heisaburō Kondo**.
- Ambard, L.**, arrest of glycolysis [in blood] by a mixture of sodium fluoride and monopotassium phosphate, A., i, 204.
amylase; its estimation and the mechanism of its action, A., i, 368.
modifications of Bertrand's method for estimating very small quantities of sugar, A., ii, 220.
estimation of urea by sodium hypobromite, A., ii, 224.
- Amberger, Conrad, and Karl Bromig**, glycerides of goose fat, A., i, 333.
- Ambler, Joseph Alfred**, naphthalenesulphonic acids. I. Sparingly soluble salts of certain naphthalenesulphonic acids, A., i, 21.
naphthalenesulphonic acids. III. Alternative method for the detection of naphthalene-2,7- and -1,6-dicarboxylic acids, A., ii, 136.
- Ambler, Joseph Alfred, and Edgar Theodore Wherry**, naphthalenesulphonic acids. III. Detection of certain naphthalenesulphonic acids, A., ii, 63.
- Aminoff, G., and R. Marzelius**, arsenogite, a new arsenite from Långban, Sweden, A., ii, 269.
- Anderegg, Frederick Osband**. See **Arthur B. Bay**.
- Anderson, R. J.**, composition of insoluble phosphoric acid of plants. XVII. A., i, 152.
- Anderson, R. J. [with W. L. Kaly]**, acerin: the globulin of the maple seed, A., i, 821.
- Andersson, Hugo**. See **Seen Odén**.
- Andō, Kiyōi**. See **Yakichi Ōsaka**.
- Andoyer, G.**, determination of water and creaming in samples of altered milk, A., ii, 662.

- Andoyer, *G.*, apparatus for technical gas analysis, A., ii, 704.
- André, *Émile*, the determination of the acetyl value of fatty substances, A., ii, 419.
- Andress, *Karl*. See *Ernst Berl*.
- Andrews, (*Miss*) *Alberta Catherine Pritchard*. See *John Read*.
- Angeletti, *A.*, use of cupferron [ammonium salt of nitrosophenylhydroxylamine] in the separation of zirconium from uranium, A., ii, 524.
- Angeletti, *A.* See also *Michele Gina*.
- Angeli, *Angelo*, relations between azoxy-derivatives and diazo-compounds, A., i, 364.
- Angeli, *Angelo*, and *Antonio Pieroni*, melanins, A., i, 626.
- Angelico, *Francesco*, transformations of salicylic acid in the animal organism, A., i, 701.
- Angelis, *Maria de*, crystalline form of trimethylphloretin, A., i, 731.
- Anger, *Gerda*. See *Hermann O. L. Fischer*.
- Angerer, *E. von*, photoelectric photometry of the luminosity of active nitrogen, A., ii, 257.
- Annett, *Harold Edward*, factors influencing alkaloidal content and yield of latex in the opium poppy (*Papaver somniferum*), A., i, 87.
- Anschütz, *Ludwig*. See *Karl von Auwers*.
- Anschütz, *Richard*, and *Alfred Hilbert*, action of nitric acid on α -diphenylethane and α -diphenylethylene, A., i, 733.
- Anselm, *Franz*. See *Kurt Hess*.
- Anthes, *E.* See *Hermann Staudinger*.
- Antropoff, *A. von*, is the existence of atoms and molecules demonstrated? A., ii, 101.
- Aoyama, *Shinjiro*. See *Yoshiharu Murayama*.
- Apollit, (*Mlle.*) *Jeanne*, the dehydration of α -phenyl- $\beta\beta$ -dimethylbutan- α -ol and of α -diphenyl- $\beta\beta$ -dimethylpropan- α -ol, A., i, 564.
- Apostolo, *C.* See *Fortunato Consonno*.
- Arakatsu, *Bunsaku*, and *Mitsuharu Fukuda*, the limiting size of colloidal particles in a Brownian motion, A., ii, 175.
- Aratus, *J.* See *Siegmund Reich*.
- Aréty, *El*. See *Marc Tiffeneau*.
- Ariano, *R.*, estimation of phosphorus in steels; separation of the phosphorus from the other components of the steel, A., ii, 347.
- deduction of the laws of chemical statics from the theorem of virtual work, A., ii, 580.
- Ariès, *E.*, the heat of vaporisation of a liquid at low temperatures, A., ii, 17.
- Arkel, *A. E. van*. See *Hugo Rudolph Kruyt*.
- Armstrong, *Edward Frankland*, and *Thomas Percy Hilditch*, catalytic actions at solid surfaces. VI. Surface area and specific nature of a catalyst; two independent factors controlling the resultant activity, A., ii, 582.
- Arnd, *Th.*, estimation of nitrogen in nitrates and nitrites by means of copper-magnesium alloy, A., ii, 58.
- Arndt, *Fritz* [with *E. Milde* and *G. Eckert*], preparation of methyl mercaptan, A., i, 842.
- Arndt, *Fritz*, and *E. Milde*, ring closure with hydrazinedicarbonamides containing sulphur. I. Dithiourazole and thiothiourazole, A., i, 813.
- Arnold, *R.* See *Marc Bridel*.
- Aron, *Hans*, and *Richard Graika*, accessory food factors. I. Special nutrition values of different fats, A., i, 475.
- Aronheim, *Gertrud*, explanation of the electrical phenomena during the decomposition of ammonium amalgam, A., ii, 296.
- Aronowsky, *Alexander*. See *Hans Fringsheim*.
- Arreguine, *Victor*, the sugar of the fruit of *Phytolacca dioica*, Linn., A., i, 487.
- determination of the boiling point of very small quantities of substances, A., ii, 240.
- Arreguine, *Victor*, and *Eduardo D. García*, preparation of triaryl and trialkyl derivatives of iodine, A., i, 534.
- a colour reaction for carbamide, A., ii, 605.
- Arrhenius, *Olof*, new methods for the estimation of potassium and ammonium, A., ii, 412.
- Arrhenius, *Svante*. See *Johannes Christiansen*.
- Artmann, *Paul*, detection of mercury as cuprous mercuric iodide, A., ii, 350.
- Arzberger, *C. F.*, *W. H. Peterson*, and *Edwin Brown Fred*, certain factors that influence the production of acetone by *Bacillus acetithylicum*, A., i, 80.
- Asahina, *Yasukiko*, and *Atsushi Fujita*, anemonin derivatives, A., i, 793.
- Asahina, *Yasukiko*, and *S. Mayeda*, evodiamine and rutaecarpine, A., i, 48.
- Asahina, *Yasukiko*, and *Seizō Motigase*, the alkaloids of Japanese *Corydalis* bulb, A., i, 86.

- Asahina, Yasuhiko**, and **Seisi Takagi**, volatile oil of *Artemisia annua*, L. II. The constitution of artemisia ketone, A., i, 9.
- Aschan, Ossian**, new components of colophony, the colophenic acids and their analogues, A., i, 512.
pinabietic acid, a definite resin acid.
I. Isolation and purification, A., i, 669.
tert.-pinene hydrochloride; the pinacol transformation, A., i, 795.
- Aschan, Ossian**, and **K. E. Ekholm**, pinabietic acid, a definite resin acid. II. Molecular weight and rotatory power, A., i, 669.
- Aston, Francis William**, mass-spectra and atomic weights, T., 677.
mass spectra of chemical elements. III., A., ii, 474.
mass spectra of the alkali metals, A., ii, 565.
- Atack, Frederick William**, the structural isomerism of the oximes. I. Criticism of the Hantzsch-Werner hypothesis and a new theory of the constitution of isomeric oximes, T., 1175.
- Atack, Frederick William**, and **George William Clough**, preparation of compounds of the anthraquinone series, A., i, 870.
- Atack, Frederick William**, and **Leonard Whinyates**, the structural isomerism of the oximes. II. A fourth benzil-dioxime, T., 1184.
- Atchley, Dana W.** See **Walter W. Palmer**.
- Aten, Adriana Hendrik Willem**, the determination of conductivity of electrolytes by means of an alternating current galvanometer, A., ii, 159.
- Aten, Adriana Hendrik Willem**, and (*Mlle.*) **Louise M. Boerlage**, the crystallisation of metals by electrical precipitation and certain connected phenomena, A., ii, 81.
- Atkins, William Ringrose Gelson**. See **Alexander Pringle Jameson**.
- Atkinson, Harold**, estimation of potassium in the presence of sodium, magnesium, sulphates, and phosphates, A., ii, 654.
- Augel, E.**, oxidation of glycerol by *Bacillus subtilis*, A., i, 641.
- Augel, E.** See also **Léon Blum**.
- Augel, Edmond van**, influence of temperature on the viscosity of normal liquids, A., ii, 575.
- Audubert, René**, the mechanism of the exchange of energy in vaporisation, A., ii, 240.
- Audubert, René**, the mechanism of the exchange of energy in the electrochemical passage of an atom to the ionic state, A., ii, 297.
the elementary quantity of energy brought into action in solution, A., ii, 303.
- Auerbach, Rudolf**, polychroism of colloidal sulphur, A., ii, 40.
coagulation and solution of silver bromide sols by ammonia, A., ii, 312.
substantive cotton dyeing, A., ii, 680.
- Auger, Victor**, double catalysis of vanadic acid and hydrogen peroxide, A., ii, 457.
the equilibria of ter-, quadri-, and quinque-valent vanadium in solution in concentrated sulphuric acid, A., ii, 554.
- Auger, Victor**, and (*Mlle.*) **M. Vary**, sulphonations in the presence of iodine, A., i, 667.
- Aurén, Tycho Eson**, the absorption of X-rays, A., ii, 367.
scattering and absorption of hard X-rays in the lightest elements, A., ii, 367.
- Auslaender, Fedora**. See **Ernst Philippi**.
- Austin, J. Harold**, and **Donald D. von Slyke**, the estimation of chlorides in blood plasma, A., ii, 272.
- Austin, J. Harold**, **Edgar Stillman**, and **Donald D. von Slyke**, factors governing the rate of excretion of urea, A., i, 383.
- Auwers, Karl von**, formation and autoxidation of coumaranones, A., i, 118.
the action of semicarbazide on unsaturated ketones, A., i, 466.
effects of ring closure on spectrochemical properties. II. Unsaturated heterocyclic compounds, A., ii, 73.
- Auwers, Karl von**, and **Ludwig Anschütz**, formation of flavones and benzylidenecoumaranones from hydroxyphenyl styryl ketone dibromides, A., i, 682.
- Auwers, Karl von**, **E. Borsche**, and **R. Weller**, the oxidation of meta-substituted o-aminophenols, A., i, 571.
- Auwers, Karl von**, and **Adelheid Fröhling**, spectro-chemistry of benzene derivatives, A., ii, 229.
spectro-chemistry of polynuclear aromatic compounds and constitution of naphthalene, A., ii, 230.

- Auwers, Karl von, and Elisabeth Lämmerhirt**, phenylhydrazine derivatives of unsaturated fatty-aromatic ketones and the products of their transformation, A., i, 464.
- Auwers, Karl von, and W. Schleich**, N-alkyl derivatives and N-carboxylic esters of indazole, A., i, 806.
- Auwers, Karl von, and E. Schmellenkamp**, the relationship between configuration and physical properties of the esters of halogenated cinnamic acids, A., i, 417.
- Auwers, Karl von, and W. Thies**, 3-oxythionaphthens [2-keto-1:2-dihydrothionaphthens], A., i, 120.
- Auwers, Karl von, and K. Ziegler**, 1:5-dimethyl-1-dichloromethyl- $\Delta^{3,4}$ -cyclohexadien-2-one, A., i, 114.
- Auwers, O. von**, magnetism and atomic structure, A., ii, 484.
- B.**
- Babe, E., and T. Cabrera**, a new indicator reagent for acids and alkalis, A., ii, 55.
- Babini, J.**, graphical methods (nomograms) for chemical calculations, A., ii, 395.
- Babrovsky, Jiri, and V. Hanáková**, hydration of the lithium cation, A., ii, 573.
- Bach, Alexis, and B. Shareky**, estimation of the products of degradation of the protein substances in blood serum, A., ii, 71.
- Bach, E.** See **Peter Rona**.
- Bachem, Albert**. See **Leonhard Grebe**.
- Back, S.** See **Thomas Featherstone Harvey**.
- Backer, Hilmar Johannes**, the action of a-sulphopropionic acid on some aromatic mono- and di-amines, A., i, 855.
- Backer, Hilmar Johannes, and J. V. Dubsky**, modified method for the preparation of a-sulphocarboxylic acids, A., i, 9.
- Backer, Hilmar Johannes**. See also **Antoine Paul Nicholas Franchimont**.
- Backes, John Valentine, Ralph Winton West, and (Miss) Martha Annis Whiteley**, quantitative reduction by hydriodic acid of halogenated malonyl derivatives. I. The amides and s-di-alkyl- and -aryl-substituted amides of mono- and di-bromomalonic acid, T., 359.
- Badar, Marcel**. See **Charles Sunder**.
- Badar, Walter**. See **British Cellulose and Chemical Mfg. Co., Ltd.**
- Badische Anilin- & Soda-Fabrik**, preparation of nitrogenous condensation products of the anthraquinone series, A., i, 274, 350.
- preparation of carbamide from compounds of ammonia and carbon dioxide, A., i, 319.
- preparation of nitrogenous derivatives of anthracene, A., i, 361.
- preparation of 3-nitroquinoline and its derivatives, A., i, 517.
- Bäckström, Hans L. J.**, affinity of the aragonite-calcite transformation, A., ii, 317.
- Backeland, L. H.** See **Mortimer Harvey**.
- Basarwind, Heinrich**. See **Hermann O. L. Fischer**.
- Bagiella, E.** See **Michele Gina**.
- Bagster, Lancelot Salisbury**, the reaction between nitric acid and copper T., 82.
- Bailey, Clyde H.** See **F. A. Collatz**.
- Bailey, G. C., and Felice Boettner**, production of coumarins from maleic and malic acids, A., i, 879.
- Bailleur, R.** See **Henri Wuyts**.
- Baillon, Léon**, synthesis of monobasic or dibasic acids by the action of malonic acid on the substituted benzhydrols; replacement of the hydroxyl group by the carbomethoxy-group; $\cdot\text{CH}_2\text{CO}_2\text{H}$ or the dicarbomethoxy-group; $\cdot\text{CH}(\text{CO}_2\text{H})_2$, A., i, 249.
- Bailly, Octave**, the action of epichlorohydrin on disodium hydrogen phosphate in aqueous solution; the stability of a monoglyceromono-phosphoric diester, A., i, 299, 493.
- the action of bromine on allyl phosphates in aqueous solution, and transformation of mono-allyl-phosphoric acid into a mono-glyceromono-phosphoric ester, A., i, 493.
- Bair, W. H.**, spectra of some compound gases in vacuum tubes, A., ii, 362.
- Baker, Julian Lovett, and Henry Francis Eberard Hulten**, amylases of the cereal grains—rye, T., 805.
- the iodometric estimation of sugars, A., ii, 417.
- iodometric estimation of the diastatic power of malis, A., ii, 420.
- Bakr, Abu Mohamed, and Joseph Edgar King**, the determination of the sorption of both solvent and solute. I. Preliminary; the system, benzene-ioline-charcoal, T., 454.
- Balareff, D.**, the estimation of phosphoric acid as magnesium pyrophosphate. VI., A., ii, 518.

- Balareff, D.**, the arrangement of the molecular volumes of the oxides in the periodic system, A., ii, 575.
- detection of pyrophosphoric acid in the presence of orthophosphoric acid and metaphosphoric acid, A., ii, 708.
- reaction of manganese, iron, and cobalt, A., ii, 712.
- Baldwin, E. J.** See *Hamilton P. Cady*.
- Ball, Nigel G.** See *Henry Horatio Dixon*.
- Balling, A.** See *Otto Fischer*.
- Baly, Edward Charles Cyril**, molecular phase hypothesis, a theory of chemical reactivity, A., ii, 78.
- Baly, Edward Charles Cyril, and William Francis Barker**, the photochemical reaction between hydrogen and chlorine and its variation with the intensity of the light, T., 653.
- Baly, Edward Charles Cyril, Isidor Morris Heilbron, and William Francis Barker**, photocatalysis. I. The synthesis of formaldehyde and carbohydrates from carbon dioxide and water, T., 1025.
- Balz, Emil** Heilbron. See *Alexander Lowy*.
- Balz, O.** See *Lothar Wöhler*.
- Bamberger, Eugen**, rearrangement of nitroparaffins, A., i, 218.
- transformation of certain aromatic compounds, A., i, 716.
- arylhydroxylamines and arylazides; a comparison, A., i, 716.
- the behaviour of arylhydroxylamines towards the hydrogen haloid acids, A., i, 723.
- Bamberger, Eugen** (with *Frd. Paula Köpcke*), nitrosophenylhydroxylamine, nitrosoacetanilides, and "diazonhydrides," A., i, 134.
- Bamberger, Eugen, and A. von Goldberger**, arylnitroamines, A., i, 135.
- Ban, J.** See *T. Yoneyama*.
- Bansa, August.** See *Fritz Mayer*.
- Barbaud, Jora**, the properties of diagrams; curves representative of the displacement of the equilibrium of chemical systems, A., ii, 313.
- Barendrecht, Hendrik Pieter**, the direct synthesis of carbamide by urease, A., i, 203.
- Bargallini, Guido, and C. Moncada**, certain substances contained in lichens, A., i, 865.
- Barkau, Georg.** See *Amundus Hahn*.
- Barker, William Francis.** See *Edward Charles Cyril Baly*.
- Barlot, J.**, a complex combination of thallium and hydrofluoric acid, A., ii, 113.
- the displacement of metals in saline solutions, A., ii, 247.
- the electrical phenomena accompanying the displacement of metals, A., ii, 297.
- Barlot, J., and J. Pernot**, combination of halogenated derivatives of mercury and of thallium, A., ii, 552.
- Barlot, J.** See also (*Mlle.*) *Monret*.
- Barnett, Edward de Barry**, preparation of chloroacetyl chloride, A., i, 494.
- Barnett, Edward de Barry, and James Wilfred Cook**, studies in the anthracene series. I., T., 901.
- Barnett, W. Leigh**, a new method for the production of cellulose acetate, A., i, 164.
- action of hydrazines on cellulose acetates, A., i, 308.
- action of chloroform on phenylhydrazine, A., i, 692.
- chloro-cellulose esters, and the action of chloro-acyl chlorides on cellulose, A., i, 847.
- Barr, David P.** See *John P. Peters*.
- Barraut, John Ogilthorpe Wadell**, action of sodium hydroxide on the coagulation of fibrinogen, A., i, 467.
- Barrow, Fred, and Evan Dalton Griffiths**, condensation of *p*-nitrobenzyl chloride with nitroso-compounds; a new mode of formation of *N*-oximino-ethers, T., 212.
- Barrow, Fred.** See also *Alexander McKenzie*.
- Bartell, F. E., and O. E. Madson**, anomalous osmosis with gold-beaten skin membranes; chloride solution in the presence of acids and bases, A., ii, 90.
- Bartels, Haas**, quantitative relationships of the cesium spectrum, A., ii, 565.
- Barthélémy, H.** See *Émile F. Terroine*.
- Bartlett, Gug, and Irving Langmuir**, crystal structures of the ammonium haloids above and below the transition temperatures, A., ii, 261.
- Baru, R.** See *Benjamin Max Margoches*.
- Bassett, Henry**, obituary notice of, T., 532.
- Bassett, Henry, jun., and Thomas Arthur Simmons**, the system, picric acid-*p*-phenylacridine, T., 416.
- Bassett, Henry, jun.** See also *Laura John Hudleston*.
- Bassi, G.** See *Gualtiero Poma*.

- Battagay, Martin**, and **J. Claudin**, dibromanthraquinones, A., i, 349.
 dinitroanthraquinones, A., i, 350.
 diaminoanthraquinones, A., i, 513.
- Batuecas, T.** See **Enrique Moles**.
- Bau, Arminius**, oxalic acid content of young leaves in spring foliage, A., i, 338.
 estimation of oxalic acid and oxaluric acid in urine and in faeces, A., ii, 356.
- Baudisch, Oskar**, the influence of light energy on the so-called exchange or displacement reactions; reduction of alkali nitrite, A., ii, 290.
 the peculiar chemical and physical properties of ferrous hydroxide peroxide; reduction of alkali nitrate, A., ii, 337.
- Bauer, Hugo**, the estimation of mercury in organic compounds, A., ii, 637.
- Bauer, Hugo**. See also **Arthur Binz**.
- Bauer, K. Hugo**, and **Felix Schoder**, 4:7-dihydroxycoumarin, A., i, 353.
- Baughman, Walter F.**, **George Samuel Jamieson**, and **Dirk Hendrik Brauns**, otoba butter, A., i, 296.
- Baughman, Walter F.** See also **George Samuel Jamieson**.
- baumeister, L.**, and **R. Glocker**, action of Röntgen rays on chloroform solutions of iodoform, A., ii, 367.
- baumgarten, Rosa**. See **P. Karrer**.
- aur, Emil**, depolarisation by light, A., ii, 236.
 electrolysis of water and an oxygen-hydrogen gas element, A., ii, 374.
- aur, Emil**, and **Adolf Rebmann**, photolysis of water, A., ii, 288.
- auriedel, G.** See **Walther Diltthey**.
- ausch, Hans**. See **Robert Schwarz**.
- baxter, Gregory Paul**, twenty-seventh annual report of the committee on atomic weights; determinations published during 1920, A., ii, 321.
 rapid method for determining the density of air, A., ii, 635.
- baxter, Gregory Paul**, and **James Hallett Hodges**, revision of the atomic weight of zinc. II. Electrolytic estimation of zinc in zinc chloride, A., ii, 630.
- baxter, Gregory Paul**, and **Leon Woodman Parsons**, a comparison of the atomic weights of terrestrial and meteoric nickel. I. The reduction of nickelous oxide, A., ii, 338.
- baxter, Gregory Paul**, **Munaro Tani**, and **Harold Canning Chapin**, revision of the atomic weight of lanthanum; analysis of lanthanum chloride, A., ii, 464.
- Baxter, Gregory Paul**, and **Carl Henry Wilson**, revision of the atomic weight of cadmium. V. Electrolytic estimation of cadmium in cadmium sulphate, A., ii, 640.
- Beane, Hal Truman**, and **Earle T. Oakes**, determination of the hydrogen-ion concentration in pure water by a method for measuring the electromotive force of concentration cells of high internal resistance, A., ii, 12.
- Beardwood, J. P.** See **A. Whitby**.
- Bechhold, Heinrich**, a capillary phenomenon, A., ii, 22.
- Bechhold, Heinrich**, **L. Dede**, and **L. Reiner**, three phase emulsions, A., ii, 177.
- Bechhold, Heinrich**, and **S. M. Neuschloss**, ultrafiltration of lecithin sols, A., i, 705.
- Beck, Franz**. See **Max Bergmann**, and **Reginald Oliver Herzog**.
- Beck, K. F.** See **Leonhard Wacker**.
- Beck, R. P.** See **Andreas Smits**.
- Beckendorf, Alfred**. See **Karl Freudenberg**.
- Becker, Ernst**. See **Karl Gustav Schwalbe**.
- Becker, K.** See **Reginald Oliver Herzog**.
- Becker, R.**, **Reginald Oliver Herzog**, **Willi Jancke**, and **Michael Polanyi**, methods for [affecting] the orientation of crystal elements, A., ii, 627.
- Beckerath, K. von**. See **Kasimir Fajans**.
- Beckley, V. A.**, the preparation and fractionation of humic acid, A., i, 227.
 the formation of humus, A., i, 227.
- Beckmann, Ernst**, **Otto Liesche**, and **Fritz Lehmann**, lignin derived from rye-straw, A., i, 546.
- Beckmann, P.** See **Alexander Gutbier**.
- Behr, Herbert**. See **Walther Borsche**.
- Behram, Jal D. Edal**. See **Gilbert John Fowler**.
- Behre, A.**, estimation of dextrose, levulose, sucrose, and dextrin in the presence of each other, A., ii, 526.
- Behrend, Robert**, and **Gustav Härtel**, constitution of methyloxaluric acid, A., i, 98.
- Behnschmidt, Wolfram**. See **Paul Horrmann**.
- Bell, Frederick K.**, and **Walter A. Patrick**, the influence of copper on the rate of solution of iron in acids, A., ii, 318.
- Bell, Frederick K.** See also **Roemer Rex Renshaw**.
- Bell, H.** See **W. Lawrence Bragg**.

- Bell, James Munsie, and Edward B. Cordon**, the nitrotoluenes. VI. The three-component system, *o*-nitrotoluene-*p*-nitrotoluene-2:4-dinitrotoluene, A., i, 330.
- Bell, James Munsie, Edward B. Cordon, Fletcher H. Spry, and Woodford White**, the nitrotoluenes. V. Binary systems of *o*-nitrotoluene and another nitrotoluene, A., i, 234.
- Bell, James Munsie, and Fletcher H. Spry**, the nitrotoluenes. VII. The three-component system, *p*-nitrotoluene-*o*-nitrotoluene-2:4:6-trinitrotoluene, A., i, 330.
- Bell, Richard D., and Edward A. Doisy**, estimation of chlorine in solid tissues, A., ii, 272.
- Bell, Richard D.** See also **Edward A. Doisy**.
- Bell, William H.**, application of *p*-nitroaniline to the standardisation of sodium nitrite solutions, A., ii, 216.
- Belladen, L.**, corrosion of certain complex brasses in sea-water. I., A., ii, 538.
- Bellars, Albert Ernest**, obituary notice of, T., 2120.
- Benary, Erich**, synthesis of pyrrole compounds from dihydropyridine derivatives, A., i, 127.
- Benary, Erich, and Max Schmidt**, oxalic acid derivatives of "diacetonitrile," A., i, 776.
- Bender, E.** See **LeRoy McMaster**.
- Benedict, Stanley Rossiter, and Emil Osterberg**, a method for the estimation of sugar in normal urine, A., ii, 660.
- Benedict, Stanley Rossiter.** See also **A. R. Davis**.
- Benirschke, Fritz.** See **Adolf Sonn**.
- Bennett, Charles Thomas**, estimation of citronellol and citronellal by tomylation, A., ii, 717.
- Bennett, Charles Thomas, and F. B. Windle**, analysis of theobromine sodium salicylate, A., ii, 527.
- Bennett, George Macdonald**, 88'-ti-chlorodiethyl disulphide, T., 418.
- Bennett, George Macdonald, and Eustace Ebenezer Turner**, organo-metallic derivatives of chromium, tungsten, and iron, A., i, 472.
- Bennett, George Macdonald, and (Miss) Edith Muriel Whincop**, some derivatives of monothioethylene glycol, T., 1860.
- Benrath, Alfred**, nature of valency, A., ii, 33.
- Benrath, Alfred, and K. Ruland**, oxidising action of ceric sulphate, A., ii, 204.
- Benrath, Alfred, and H. Tesche**, electrical conductivity of solid mixtures of salts, A., ii, 152.
- Bensaude, Alfredo** [with **Charles Lepierre**], descloizite from Portugal, A., ii, 54.
- Bereza, St.** See **Hermann Standinger**.
- Bergeim, F. H.** See **W. Lee Lewis**.
- Berger, Ernest, and L. Delmas**, the combustion of carbon in the presence of oxides, A., ii, 259.
- Berger, G.**, the catalytic action of electrolytes on the photolysis of Eder's solution, A., ii, 477.
- Bergh, Hijnans van den, and P. Muller**, serum lipochrome, A., i, 286.
- Bergholm, C.**, temperature coefficient of the electrical double refraction in liquids. II. A., ii, 568.
- Bergmann, Max**, structure of cellobiose, A., i, 707.
- Bergmann, Max** [with **W. W. Wolff**], oxidative degradation of mucic and saccharic acids to new aldehyde-acids of the sugar series, A., i, 540.
- Bergmann, Max, and Franz Beck**, acetolysis of polysaccharides, A., i, 613.
- Bergmann, Max, Erwin Brand, and Ferdinand Dreyer**, synthesis of $\alpha\beta$ -diglycerides and unsymmetrical triglycerides, A., i, 444.
- Bergmann, Max, Ferdinand Dreyer, and Fritz Radt**, behaviour of certain acyl derivatives of allylamine towards halogens, A., i, 773.
- Bergmann, Max, and Arthur Mieleky**, ethylglycoside as a type of $\alpha\beta$ -glucosides, A., i, 763.
- Bergmann, Max, and Fritz Radt**, a compound of sulphuric acid with the chloride and anhydride of benzoic acid, A., i, 668.
- Bergmann, Max, Fritz Radt, and Erwin Brand**, 2-phenyl-5-chloromethylzolidine, A., i, 688.
- Bergmann, Max, and Herbert Schütte**, the unsaturated products of reduction of the sugars and their transformations. I. The glucosyl problem, A., i, 307.
- unsaturated reduction products of the sugars and their transformations. II. New anhydro-sugars; synthesis of a glucosidomannose; structure of cellobiose, A., i, 648.
- Bergmann, Max.** See also **Emil Fischer**.
- Berkeley, C.**, pentose mononucleotide of the pancreas of the dogfish (*Squalus sucklii*), A., i, 473.
- anaerobic respiration in some pelecypod molluscs; its relation to glycogen, A., i, 524.

- Berl, Ernst, Karl Andreas, and Wilhelm Müller**, estimation of benzene hydrocarbons in coal gas, A., ii, 354.
- Berl, Ernst, and W. von Boltenstern**, direct estimation of water in mixed sulphuric and nitric acids, A., ii, 705.
- Bertingozzi, Sergio**, chemical constitution and rotatory power; aldehydoamino-derivatives of α -aminophenyl-naphthylmethane, A., i, 107.
- Bernaola, Victor J.**, the law of moduli and the theory of electrolytic dissociation; determination of moduli of refraction, A., ii, 285.
- formation and constitution of kaolin, A., ii, 407.
- Berndt, A.** See **Julius Tröger**.
- Berner, E., and Claus Nissen Riiber**, optically active bromohydroxy- β -phenylpropionic acids, A., i, 788.
- Bernheim, A.** See **Heinrich Wieland**.
- Bernoulli, August L., P. Dutoit, Philippe Auguste Guye, and W. D. Treadwell**, report of the Swiss commission on atomic weights, A., ii, 500.
- Berthelot, Albert, and (Mlle.) E. Ossart**, the micro-organisms producing acetone, A., i, 909.
- Bertrand, Gabriel, and Arthur Compton**, influence of heat on the activity of salicimase, A., i, 282.
- a peculiar modification of amygdalinase and amygdalase due to ageing, A., i, 469.
- Bertrand, Gabriel, and (Mme.) M. Rosenblatt**, the general presence of manganese in the vegetable kingdom, A., i, 759.
- Bertrand, Gabriel, and R. Vladesco**, the causes of the variation of the zinc content of vertebrate animals; influence of age, A., i, 382.
- probable intervention of zinc in the phenomena of fecundation in vertebrate animals, A., i, 699.
- the variation in the zinc content of the rabbit's body during growth, A., i, 907.
- Bessemaans, A.**, apparatus for titration with alkali hydroxides, A., ii, 213.
- Berthorn, Emil**, kynurenic acid, A., i, 609.
- Beth, Wilhelm.** See **Otto Mumm**.
- Bethe, Albrecht**, charging and discharging organic dyes, A., ii, 14.
- Betti, Mario, and Assunta Capaccioli**, chemical constitution and rotatory power. V. Derivatives of α -anisylethylamine [α -*p*-methoxyphenylethylamine], A., i, 107.
- Bevan, Edward John**, obituary notice of, T., 2121.
- Bezssonoff, N.**, a colour reaction common to antiscorbutic extracts and to quinol, A., ii, 608.
- Bhate, S. N.** See **Gilbert John Fowler**.
- Bhatnagar, Shanti Swarupa**, studies in emulsions. II. The reversal of phases by electrolytes, and the effects of free fatty acids and alkalis on emulsion equilibrium, T., 61.
- studies in emulsions. III. Further investigations on the reversal of type by electrolytes, T., 1760.
- the effect of adsorbed gases on the surface tension of water, A., ii, 169.
- Bhattacharya, D. N.** See **Niratan Dhar**.
- Bhoumik, Jagadish Chandra.** See **Rasik Lal Datta**.
- Biedermann, W.**, studies in fermentation. V. Enzyme formation through the action of ions, A., i, 11.
- starch, starch granules, and starch solutions, A., i, 162.
- the co-ferment (complement) of diastase, A., i, 468.
- Bielouss, Elias**, reduction of trinitrotoluene, A., i, 712.
- Bierry, Henri.** See **Alexandre Desgrez**.
- Biffi, Pietro**, comparison of methods for estimation of uric acid in blood, A., ii, 664.
- Büllmann, Einar**, the hydrogenation of quinhydrone, A., ii, 372.
- Büllmann, Einar, and (Mlle.) Karin Thaulow**, the titrimetric estimation of mercury, A., ii, 560.
- Bijvoet, J. M.** See **N. H. Kolkmeijer**.
- Billard, Frédéric**, the hydrobenzoin and semipinacolic transpositions of propylhydrobenzoin and butylhydrobenzoin, A., i, 565.
- Billetter, Jean**, influence of chloride on the solubility of chlorate and its dependence on temperature, A., ii, 40.
- Billy, Maurice**, titanium peroxide, A., ii, 456.
- titanium, A., ii, 553.
- Biltz, Heinrich**, [the uric acids and their derivatives], A., i, 606.
- the action of carbamide and of substituted carbamides on alloxan and its methyl derivatives, A., i, 616.
- Biltz, Heinrich, and Hans Bilow**, derivatives of 7:9-dimethyluric acid, A., i, 609.
- Biltz, Heinrich, and Dorothea Heidrich**, 5-hydroxy-1:3-dimethylxanthoin, A., i, 817.

- Biltz, Heinrich**, and **Lisbeth Herrmann**, the acidity of the hydrogen atoms in uric acid, A., i, 691.
- Biltz, Heinrich**, and **Myron Heyn**, the preparation of 1:3-dimethyl- ψ -uric acid and 1:3-dimethyluric acid, A., i, 610.
- Biltz, Heinrich**, and **Maria Kobel**, 5-hydroxyhydantoin, A., i, 815.
- Biltz, Heinrich**, and **Hans Krzikalla**, derivatives of 1:7:9-trimethyluric acid, A., i, 609.
- 3:9-dimethyluric acid and its derivatives, A., i, 614.
- Biltz, Heinrich**, **Karl Marwitzky**, and **Myron Heyn**, 7-methyluric acid and its derivatives, A., i, 606.
- 7-ethyluric acid and its derivatives, A., i, 607.
- Biltz, Heinrich**, and **Fritz Max**, methylation by means of diazomethane in the uric acid series, A., i, 131.
- methylammonium iodide, A., i, 546.
- the alkylation of theobromine, A., i, 590.
- 1:3-diethylhydantoin, A., i, 616.
- derivatives of alloxanic acid (5-hydroxyhydantoin-5-carboxylic acid), A., i, 617.
- allantoin and its methyl derivatives, A., i, 893.
- stability of uric acid-glycol dimethyl ether, A., i, 595.
- Biltz, Heinrich**, and **Rudolf Robl**, explanation of certain transformations of oxonic acid and of allantoxaidin, A., i, 891.
- 3-methylloxonic acid and 3-methylallantoxaidin, A., i, 893.
- Biltz, Heinrich**, and **Karl Strufe**, derivatives of 1:9-dimethyluric acid, A., i, 612.
- derivatives of 1-methyl-9-ethyluric acid, A., i, 613.
- derivatives of 1:3:9-trimethyluric acid, A., i, 613.
- Biltz, Heinrich**, and **Karl Strufe** [with **Ernst Topp**, **Myron Heyn**, and **Rudolf Robl**], 8-thiouric acids and xanthines containing alkyl groups in position 9, A., i, 611.
- Biltz, Heinrich**, and **Herbert Wittek**, alkyl- and aryl-barbituric acids, A., i, 454.
- Biltz, Heinrich**, and **Gertrud Zellner**, methylation of 7-methyl- ψ -uric acid and 7-ethyl- ψ -uric acid, A., i, 610.
- 1:3:7:7-tetramethyluramil, A., i, 617.
- Biltz, Wilhelm**, an empirical law of the molecular volumes of the halogens and their compounds for all states of aggregation, A., ii, 137.
- Biltz, Wilhelm**, a linear relation for certain atomic volumes, A., ii, 487.
- Biltz, Wilhelm**, and **Gustav F. Hüttig**, compounds of ammonia with metallic calcium, strontium, and barium, A., ii, 201.
- Biltz, Wilhelm**, and **Wilhelm Stollenwerk**, halogen silver ammoniates, A., ii, 201.
- Binder, F. Otto H.**, calculation of the heating value from the constitution of the compound, A., ii, 241.
- constitution and heat of combustion, A., ii, 435.
- Bing, Richard**, the influence of CO_2 , Cl_2 , and PO_4 ions on the oxidation processes in the animal body, A., i, 286.
- Bingham, Kathleen E.** See **John L. Haughton**.
- Binz, Arthur**, and **Hugo Bauer**, action of mercuric chloride on salvarsan and neosalvarsan, A., i, 629.
- Binz, Arthur**, and **E. Haberland**, sulphoxyl compounds. XII. Action of oxidising agents on formaldehyde sulphonylate, A., i, 9.
- Binz, Arthur**, and **E. Holsappel**, sulphoxyl compounds. XI. Derivatives of hydrosulphamine, A., i, 89, 197.
- Birch, Stanley Francis**, **William Henry Gough**, and **George Armand Robert Kon**, the formation and stability of spiro-compounds. VI. New derivatives of cyclopropane and cyclohexane-spirocyclopropane, T., 1315.
- Birkenbach, Lothar**, electric arc for use in Lockemann's modification of the Marsh apparatus for the estimation of arsenic, A., ii, 215.
- Birkenbach, Lothar**. See also **Otto Hönigschmid**.
- Biren, Julius**. See **Rudolf Ruer**.
- Birge, Raymond T.**, the Balmer series of hydrogen, and the quantum theory of line spectra, A., ii, 606.
- Bishop, (Miss) E.** See **E. F. Burton**.
- Bistrzycki, Augustin**, and **Alexander Lecco**, benzoylene- and picolinylester-benzidiazoles, A., i, 456.
- Black, John H.** See **Thomas G. Thompson**.
- Blaise, Edmond Émile**, derivatives of 1:4-diketones and semicarbazide, A., i, 193.
- preparation of acyclic δ -diketones, A., i, 847.
- Blake, J. C.**, the individuality of erythro-dextrin, A., i, 96.
- Blaszkowski, Helena** i **Zofia**. See **Wojciech Swientoslowski**.

- lar, *E.*, and *R. Weingand*, preparation of potassium perchlorate, A., ii, 333.
- lau, *Nathan F.*, the estimation of creatinine in the presence of acetone and acetoacetic acid, A., ii, 718.
- loch, *Eugène*. See *Léon Bloch*.
- loch, *Léon*, and *Eugène Bloch*, spark spectra of mercury, copper, zinc, and thallium in the extreme ultra-violet, A., ii, 3.
- some spark spectra in the extreme ultra-violet, A., ii, 286.
- the spark spectra of iron and cobalt in the extreme ultra-violet, A., ii, 286.
- spark spectra of gold and platinum in the extreme ultra-violet, A., ii, 364.
- critical potentials and the band spectra of nitrogen, A., ii, 529.
- lom, *Axel Viggo*, formation of nitrophenetole from chloronitrobenzene, A., i, 413.
- velocity of hydrolysis of *p*-nitrophenetole, A., ii, 497.
- typical reaction for the differentiation of carbazole derivatives, A., ii, 664.
- loor, *W. R.* See *G. M. McKellips*.
- loss, *Chr.* See *Walther Diltthey*.
- ount, *Bertram*, obituary notice of, T., 545.
- jümlich, *Ewald*. See *Heinrich Wieland*.
- um, *F.*, and *Eduard Strauss*, protein chemistry. I. The capacity of combining with iodine and the constitution of the proteins, A., i, 199.
- um, *Léon*, and *E. Anbel*, the degradation of *n*-valeric acid in the animal organism, A., i, 756.
- umann, *Arnold*, and *Otto Zeitschel*, verbenene [dehydro- α -pinene] and certain of its derivatives, A., i, 426.
- amrich, *K.* See *Alfred Wohl*.
- unt, *Katharine*, and *Marie Dye*, basal metabolism of normal women, A., i, 699.
- lyth, *Alexander Wynter*, obituary notice of, T., 546.
- as, *Friedrich*, action of saponin on vegetable cells, A., i, 294.
- bach, *Franz*. See *Gustav Heiler*.
- odansky, *Meyer*, biochemical studies on marine organisms. II. The occurrence of zinc, A., i, 78.
- the distribution of zinc in the organism of the fish, A., i, 907.
- estimation of small quantities of zinc, A., ii, 656.
- odeker, *E.* See *Emil Heuser*.
- odecker, *Fr.*, and *H. Volk*, unsaturated bile acids. II. An isomeride of apocholic acid, A., i, 865.
- Boedecker, *Fr.* See also *J. D. Riedel*, Akt. Ges.
- Böeseken, *Jacob*, the significance of the formation of boro-complexes (and acetonic compounds) in studying the constitution of configuration of polyhydric alcohols and hydroxy-acids, A., i, 843.
- the distinction between α -hydroxy-acids, $\text{OH}\cdot\text{CHR}\cdot\text{CO}_2\text{H}$ and $\text{OH}\cdot\text{CRR}'\cdot\text{CO}_2\text{H}$, by the boric acid method and the space configuration of these substances, A., i, 844.
- the catalytic oxidation of alcohols under the influence of photoactive ketones and the explanation of the phenomena of catalysis, A., ii, 500.
- Böeseken, *Jacob*, *W. F. Brandsma*, and *H. A. J. Schoutissen*, the velocity of the diazotisation reaction as a contribution to the problem of substitution in the benzene nucleus, A., ii, 34.
- Böeseken, *Jacob*, and *H. Convert*, the configuration of some sugars, A., i, 497.
- Böeseken, *Jacob*, and *H. G. Derr*, the 1:2-cycloheptanediols and the suppleness of the saturated rings, A., i, 663.
- the distinction and separation of cyclic *cis*- and *trans*-1:2-diols by means of acetone, A., i, 663.
- Böeseken, *Jacob*, and *B. B. C. Felix*, the influence of some α -keto-acids on the conductivity of boric acid, A., i, 844.
- Böeseken, *Jacob*, and *P. H. Hermans*, a new method for determining the relative position of the hydroxyl groups in the saturated glycols, A., i, 646.
- Böeseken, *Jacob*, and (*Mlle.*) *P. Ouwehand*, the influence of boric acid on the conductivity of phenolcarboxylic acids, A., i, 861.
- Böger, *Otto*. See *Wilhelm Schneider*.
- Böhm, *P.* See *Heinrich Wieland*.
- Böhme, *Otto*. See *Karl Freudenberg*, and *Otto Mumm*.
- Boehmer, *H. C.* See *C. W. Simmons*.
- Boehringer & Söhne, *C. F.*, process for obtaining the active ingredient of *Lobelia inflata*, A., i, 267.
- preparation of amino-compounds of cinchona alkaloids and their derivatives, A., i, 515.
- Boeke, *Hendrik Ewag*, the methods of investigating the molecular condition of silicate fusions, A., ii, 111.
- Bönicke, *K.* See *Julius Troeger*.
- Boeree, *Alfred Reginald*. See *Henry Thomas Tizard*.

- Börjeson, Gösta**, "gilding" of amicros of some colloids, A., ii, 27.
- Boerlage, (Mlle.) Louise M.** See *Adriaan Hendrick Willem Aten*.
- Boersch, Erich.** See *Heinrich Wieland*.
- Böse, Margarethe**, certain sulphur derivatives of isopropylamine, A., i, 13.
- primary quaternary bases, A., i, 60.
- Böttger, Wilhelm**, electro-analytical practice, A., ii, 65.
- electrolytic separation of mercury and copper, A., ii, 351.
- Boettner, Felix.** See *G. C. Bailey*.
- Bogus, Robert Herman**, hydrolysis of the silicates of sodium, A., ii, 112.
- Bohnson, Van L.**, the catalytic decomposition of hydrogen peroxide by sodium iodide in mixed solvents, A., ii, 185.
- catalytic decomposition of hydrogen peroxide by ferric salts, A., ii, 250.
- Bohr, N.**, the series spectra of the elements, A., ii, 137.
- Bohrmann, Anna.** See *Josef Tillmans*.
- Boismennu, Etienne.** See *Charles Moureu*.
- Bokoray, Thomas**, chemistry of enzymes, A., i, 369, 522.
- Bolland, A.**, microchemical reactions of iodic acid, A., ii, 57.
- Bolliger, Adolf.** See *Paul Rüggli*.
- Boltenstern, W. von.** See *Ernst Berl*.
- Bommer, H.** See *Hermann Staudinger*.
- Bommer, Max.** See *Richard Willstätter*.
- Bone, William Arthur**, and *William Arthur Haward*, gaseous combustion at high pressures. II. The explosion of hydrogen-air and carbon monoxide-air mixtures, A., ii, 628.
- Bone, William Arthur**, and *Leonard Silver*, a new method for determining the volatile matter yielded by coals up to various temperatures, T., 1145.
- Bonnesfoy, (Mlle.) J.**, and *Jh. Martinet*, 6-methylisatin, A., i, 194.
- Bonnell, (Miss) Jane**, and *Edgar Philip Ferman*, the colour of iron alum, T., 1994.
- Borel, Ch.** See *Adrien Jaquered*.
- Borgwardt, Erich.** See *Otto Diels*.
- Born, M.**, volume and heat of hydration of the ions, A., ii, 166.
- Born, M.**, and *W. Gerlach*, scattering of light in gases, A., ii, 632.
- Bornemann**, carbon nutrition in cultivated plants, A., i, 532.
- Bornstein, A.**, adrenaline glycaemia, A., i, 289.
- Borsche, E.**, the Prizilla tartrate method for potassium, A., ii, 349.
- Borsche, E.** See *Karl von Auwers*.
- Borsche, Walther**, nitrocyanoophenylhydrazines, A., i, 460.
- 5-chloro-2:4-dinitrophenylhydrazine and 4:6-dinitro-1:3-dihydrazinobenzene, A., i, 461.
- condensation of 2:4:6-trinitrophenylhydrazine with quinones, A., i, 621.
- Borsche, Walther** [with *Herbert Sehr* and *Hans Wieckhorst*], constitution of the bile acids, A., i, 729.
- Borsche, Walther**, and *M. Pommer*, hydrindene, I., A., i, 168.
- Borsche, Walther**, and *A. Roth*, constituents of the kava-root. II. Kava resin, A., i, 862.
- Borsche, Walther**, and *A. Roth* [with *W. Eberlein*], phenheptamethylene and certain other compounds of the phenheptamethylene series, A., i, 166.
- Boruttan, Heinrich**, and *H. Cappenberg*, the active constituents of shepherd's purse (*Capsella bursa pastoris*), A., i, 487.
- Bossanquet, C. H.** See *W. Lawrence Bragg*.
- Bosch, C.**, compound of carbamide with calcium nitrate, A., i, 652.
- Bossuet, Robert.** See *Pierre Jolibois*.
- Bothe, W.**, and *G. Lechner*, the disintegration constant of radium emanation, A., ii, 617.
- Botolfsen, E.** See *Louis Hackspill*.
- Bongault, J.**, action of ammonia on phenylpyruvic acid and benzylpyruvic acid, A., i, 177.
- Bongault, J.**, and *Paul Robin*, the ideamidines, A., i, 272.
- Bouillot, J.**, acid methylarsenate of strychnine, A., i, 834.
- Boullanger, E.**, the manufacture of nitrates by the biochemical oxidation of ammonia, A., i, 836.
- Bouman, N.**, the precipitation of tin by iron, A., ii, 134.
- Bouman, P.** See *Andreas Smits*.
- Bourgerel, G.**, the Mendeleev series arranged and brought up to date in 1917, according to the latest published atomic weights, A., ii, 162.
- Bourion, François**, and *Ch. Courtois*, the formation of hexachlorobenzene: the electrolytic preparation of chlorobenzene, A., i, 502.
- Bourquelot, Emile**, and *Marc Bide*, application of the biochemical method of detection of dextrose to the study of the products of the enzyme hydrolysis of inulin, A., i, 493.
- Boutarie, Augustin**, and *M. Vuillemin*, flocculation of colloidal arsenic sulphide: principle of a method study, A., ii, 449.

- ntaric, *Augustin*, and *M. Vuillaume*, flocculation of colloidal arsenic sulphide; influence of the dilution of the electrolyte and of the quantity of electrolyte, A., ii, 537.
- ntaric, *Augustin*. See also *Charles Mourou*.
- nvier. See *Pierre Jolibois*.
- wen, E. J. See *Cyril Norman Hinshelwood*.
- wen, I. S. See *Robert Andrews Millikan*.
- yman, John Herbert. See *Oscar Lisle Brady*.
- yman, S., some notes on the estimation of sulphur and chlorine by the lamp method, A., ii, 706.
- yer, Sylvester. See *Theodore William Richards*.
- yle, John Scott Walker. See *Alexander McKenzie*.
- anaas, Asbjörn. See *Heinrich Goldschmidt*.
- adford, Samuel Clement, theory of gels. III., A., ii, 577.
- adley, Harold Cornelius, and H. Felscher, autolysis. VI. Effect of certain colloids on autolysis, A., i, 76.
- ady, Oscar Lisle, and John Herbert Cowman, dinitrotolylhydrazines, T., 94.
- ady, Oscar Lisle, and William Howie, Gibson, 2:4:6-trinitrotolylmethyl-stroamine, T., 98.
- acke, (Mlle.) Marie. See *Marc Vidal*.
- agg, W. Lawrence, and H. Bell, the dimensions of atoms and molecules, T., ii, 689.
- agg, W. Lawrence, R. W. James, and C. H. Bosanquet, the intensity of reflection of X-rays by rock-salt. I., A., ii, 477.
- ay, S. A., and F. E. Hobart, a new method for the detection and estimation of cobalt, A., ii, 352.
- ay, S. A., and Ralph F. Schneider, structure of gold amalgams as determined by metallographic methods, A., 406.
- et, H. B. See *Roger Adams*.
- ch, Gerald Eyre Kirkwood, and John F. Smith, a bivalent nitrogen derivative of carbazole, A., i, 56.
- ch, Erwin. See *Max Bergmann*.
- ch, Kurt, reduction of organic halogen compounds. IV. The tetra-tributano series and $\alpha\alpha\beta\beta$ -tetraphenylbutatriene, A., i, 783.
- duction of organic halogen compounds. VI. $\alpha\alpha\beta\beta$ -Tetra-aryl- $\Delta\beta$ -antene, A., i, 785.
- Brand, Kurt, and Franz Kercher, reduction of organic halogen compounds. V. Phenol ethers of the tetraphenylbutane series, A., i, 787.
- Brand, Kurt, and Otto Stallmann, thiophenols. IV. Thiophenol ethers of triphenylmethane and the anoxochromic action of alkylthiol groups, A., i, 654.
- Brandma, W. F. See *Jacob Böeseken*.
- Brandt, Leopold, catalytic combustion of sucrose, A., i, 11.
- Brass, Kurt, and Ludwig Köhler, dibenzothianthrenequinone, A., i, 435.
- Braun, Hans Julius. See *Otto Ruff*.
- Braun, Julius von, and Otto Braunsdorf, syntheses of homomorpholine and benzohomomorpholine, A., i, 435.
- unsaturated residues in chemical and pharmacological relationship. III., A., i, 772.
- Braun, Julius von, and Georg Kirschbaum, benzo-polymethylene compounds. II. Brominated alicyclic substitution products of tetrahydronaphthalene and Δ^1 -dihydronaphthalene, A., i, 407.
- Braun, Julius von, and Kurt Moldaenke, styrene from ethylbenzene, A., i, 405.
- Brauner, Bohuslav, the new International Commission on chemical elements, A., ii, 691.
- Brauns, Dirk Hendrik, and John A. MacLaughlin, the estimation of phosphatides, A., ii, 72.
- Brauns, Dirk Hendrik. See also *Walter F. Baughman*, and *George Samuel Jamieson*.
- Brauns, R., formation and stability of modifications of polymorphous substances below their transition temperature, A., ii, 587.
- Braunsdorf, Otto. See *Julius von Braun*.
- Bray, William Cramell, a periodic reaction in homogeneous solution and its relation to catalysis, A., ii, 629.
- Breezeale, J. P., the estimation of calcium in the presence of phosphates, A., ii, 132.
- Breezeale, J. P., and Lyman J. Briggs, concentration of potassium in orthocase solutions not a measure of its availability to wheat seedlings, A., i, 388.
- Bredt, Julius, and Aug. Goeb, *p*-diketocamphane and the constitution of Schrötter's oxycamphor, A., i, 257.
- Bregenzner, Albert. See *Emil Knoevenagel*.
- Brendel-Wirminghaus, Sophie, poleffect in the arc spectrum of manganese, A., ii, 421.

- Brenner, Widar**, action of neutral salts on the resistance to acids, permeability, and life of protoplasts, A., i, 209.
- Bressanin, Giuseppe**, reaction of tin salts, A., ii, 464.
- Bretschneider, R.** See *Hermann Ost.*
- Brewster, Joseph F.**, use of edestin in determining the proteolytic activity of pepsin, A., ii, 419.
- Bridel, Marc**, preservation of gentian preparations prepared from dry, unfermented gentian root, A., i, 132.
action of emulsin on galactose in solution in propyl alcohol of different strengths, A., i, 469.
action of emulsin from almonds on lactose in solution in 85% ethyl alcohol, A., i, 824.
application of the law of mass action to the results obtained in the action of β -galactosidase on galactose in solution in propyl alcohol, A., ii, 442.
- Bridel, Marc**, and *R. Arnold*, the use of different precipitating agents in the preparation of emulsin from almonds, A., i, 282.
a method of applying to plants the biochemical process for the detection of dextrose, A., ii, 465.
- Bridel, Marc**, and (*Mlle.*) *Marie Braecke*, the presence of a glucoside decomposable by emulsin in two species of *Melampyrum*, A., i, 840.
- Bridel, Marc**. See also *Emile Bourquelot*.
- Briggs, Henry**, physical exertion, fitness, and breathing, A., i, 141.
adsorption of gas by charcoal, silica, and other substances, A., ii, 624.
- Briggs, Lyman J.** See *J. F. Breazeale*.
- Briggs, Samuel Henry Clifford**, valency and co-ordination, T., 1876.
the elements regarded as compounds of the first order, A., ii, 583.
- Brill, Harvey C.**, esters of aminobenzoic acids, A., i, 727.
- Briner, Emil**, some negative attempts to transmute elements in accordance with Marignac's views on the unity of matter, A., ii, 635.
- Brinkley, Stuart K.** See *Harry Ward Foote*.
- Brinton, Paul H. M.-P., F. N. Schertz, William G. Crockett, and P. P. Merkel**, modification of the Dumas method, and application of the Kjeldahl method to the estimation of nitrogen in nitro-naphthalenes, A., ii, 532.
- British Cellulose and Chemical Mfg. Co., Ltd., Walter Bader, and Donald Archer**, Nightingale, manufacture of alkyl-amides of aromatic sulphonic acids, A., i, 786.
- British Dyestuffs Corporation, Ltd.** See *Arthur George Green, and Arthur Clibbens*, manufacture of symmetrical alkylated *m*-phenylenediamines, A., 805.
- British Dyestuffs Corporation, Ltd.** See *Arthur George Green, and Arthur Clibbens*, manufacture of chlorinated derivatives of toluene, A., i, 853.
- British Dyestuffs Corporation, Ltd.** See *Arthur George Green, and Edwin Herbert*, manufacture of chlorinated derivatives of toluene, A., i, 853.
- Brittain, Arthur**. See *British Dyestuffs Corporation, Ltd.*
- Britton, Hubert Thomas Stanley**, the solubility of glucinum sulphate in water and sulphuric acid at 25° T., 1967.
separation of aluminium from glucinum I. and II., A., ii, 657, 712.
- Britton, Hubert Thomas Stanley, Arthur John Allmand**, the system of potassium sulphate-glucinum sulphate-water at 25° T., 1463.
- Brochet, André (Victor)**, preparation of active hydrogenating metals, A., 100.
the preparation of active hydrogenating metals in liquid media, A., ii, 10.
- Brochet, André, and R. Cornibert**, tetrahydronaphthols, A., i, 568.
- Brodin, P.** See *Chaufard*.
- Broek, A. van den**, general system of isotopes, A., ii, 295.
- Broeksmit, T. C. N.**, crystalline magnesium carbonate, A., ii, 263.
behaviour of ammonium cations towards magnesium, A., ii, 656.
- Brönsted, Johannes Nicolaus**, the influence of salts on chemical equilibria in solutions, T., 574.
- Brössler, F.**, the existence of beta nuclei in the nuclei of radioactive elements, A., ii, 366.
- Brogie, Louis de, and A. Danvillier**, the electronic structure of heavy atoms, A., ii, 475.
- Brogie, Louis de.** See also *Marie's Brogie, and A. Danvillier*.
- Brogie, Maurice de**, the corpuscular spectra of the elements, A., ii, 332.
the corpuscular spectra: laws of the photo-electric emission for high frequencies, A., ii, 292.
- Brogie, Maurice de, and Louis de Brogie**, Bohr's model of the atom and the corpuscular spectra, A., ii, 323.
the corpuscular spectra of the elements, A., ii, 615.
- Bromig, Karl**. See *Conrad Amberg*.

- Brooks, Matilda Moldenhauer**, comparative studies on respiration. XIV. Antagonistic action of lanthanum, A., i, 385.
comparative studies on respiration. XV. The effect of bile salts and of aspenin, A., i, 385.
- Brooks, S. C.**, the kinetics of inactivation of complement by light, A., i, 143.
the mechanism of complement action, A., i, 143.
- Broughall, L. St. C.**, dimensions of the atom, A., ii, 445.
- Brown, Elmer B.** See *Treat Baldwin Johnson*.
- Brown, Joseph Grant**, states of iron in nitric acid, A., ii, 676.
- Brown, Oliver W.** See *C. O. Henke*.
- Brown, Ralph L.** See *Charles Moureu*.
- Brown, S. M.** See *Walter Pearson Kelley*.
- Browne, Charles A.**, and *C. A. Gamble*, revision of the optical method for analysing mixtures of sucrose and raffinose, A., ii, 661.
- Browning, Philip Embury**, qualitative separation and detection of uranium, vanadium, and chromium when present together, A., ii, 279.
- Browning, Philip Embury**, and *Lynaan E. Porter*, separation of gallium from indium and zinc by fractional crystallisation of the caesium gallium alum, A., ii, 265.
- Browning, Philip Embury.** See also *Lynaan E. Porter*.
- Brutsch, Hans.** See *Hans Edward Fierz*.
- ruhs, G.**, volumetric method for the estimation of acids and bases which yield insoluble salts, A., ii, 582.
device for filling burettes, A., ii, 705.
- rué, Marcel**, and *H. Garban*, urobilin and stercobilin [in the urine] of infants, A., i, 755.
- runel, Roger Frederick, J. L. Grenshaw**, and *Elise Tobin*, purification and some physical properties of certain aliphatic alcohols, A., i, 299.
- runi, Giuseppe**, solubility of crystalline substances in caoutchouc, A., i, 352.
new process for the cold vulcanisation of caoutchouc, A., i, 575.
- runi, Giuseppe**, and *C. Pelizzola*, presence of manganese in raw caoutchouc and the origin of tackiness, A., i, 798.
- runi, Giuseppe**, and *E. Romani*, mechanism of the action of certain accelerants of the vulcanisation of caoutchouc, A., i, 734.
- Runner, Erich**, the action of fluorine on potassium hydrogen sulphate, A., ii, 45.
- Brunswik, Hermann**, the microchemistry of chitosan compounds, A., i, 259.
- Bruylants, Pierre**, and *G. Desmet*, determination of the atomic weight of tellurium, A., ii, 448.
- Bruyn, Cornelis Adrian Lobry de**, passivity; researches on iron and nickel, A., ii, 153.
- Buchheim, Kurt.** See *Wilhelm Steinkopf*.
- Buchert, Rudolf.** See *Bruno Emmert*.
- Buck, Johannes Sybrandt.** See *Isidor Morris Heilbron*.
- Buckmaster, George Alfred**, absorption curve of hemoglobin and carbon dioxide, A., i, 632.
- Buckewicz, Eugen von.** See *Jakob Meisenheimer*.
- Buehrer, Theo. F.** See *Joel H. Hildebrand*.
- Bülow, Hans.** See *Heinrich Blitz*.
- Bürker, K.**, necessity for exact hemoglobin estimations and erythrocyte [red corpuscle] counts, A., ii, 720.
- Bürki, Fr.**, and *Fr. Schaaf*, kinetics of the decomposition of hydrogen peroxide, A., ii, 389.
- Büscher, Friedrich.** See *Erich Tiede*.
- Buhk, Gustav.** See *Karl Andreas Hofmann*.
- Bullis, D. E.** See *J. Shirley Jones*, and *R. H. Robinson*.
- Bullnheimer**, a new method for the evaluation of zinc dust, A., ii, 655.
- Buning, H. L.**, the Hofmann and Curtius transformations in relation to steric hindrance, A., i, 520.
- Bunting, Elmer N.** See *Edward Wight Washburn*.
- Burdick, Charles L.**, and *E. Stanley Freed*, the equilibrium between nitric oxide, nitrogen peroxide, and aqueous solution of nitric acid, A., ii, 313.
- Burger, B.** See *Walther Biltz*.
- Burgess, Henry.** See *Gilbert Thomas Morgan*.
- Burgess, Kenneth E.**, the toxicity towards *Staphylococcus* of dilute phenol solutions containing sodium benzoate, A., i, 291.
- Burke, Winthrop M.**, ionisation of aqueous solutions of ammonia in the presence of carbamide, A., ii, 79.
- Burnett, Robert Alexander.** See *John Arnold Cranston*.
- Burns, J. W.** See *Arthur C. Neish*.
- Burns, Robert Martin.** See *Hugh Stott Taylor*.

- Burrows, George Joseph**, the rate of hydrolysis of methyl acetate by hydrochloric acid in solutions containing sucrose, T., 1798.
 volume changes in the process of solution, A., ii, 308.
 the hydrolysis of carbamide hydrochloride, A., ii, 319.
- Burrows, George Joseph**, and **Eustace Ebenezer Turner**, experiments on the production of compounds containing arsenic as a centre of optical activity, T., 426.
 some additive compounds derived from arsines, T., 1448.
 the constitution of the nitroprussides. II. The alkylation of nitroprussic acid, T., 1450.
- Burton, E. F.**, and (*Miss*) **E. Bishop**, coagulation of colloidal solutions by electrolytes; influence of concentration of sol, A., ii, 176.
- Burton, Harold**, and **James Kenner**, the influence of nitro-groups on the reactivity of substituents in the benzene nucleus. III. The partial reduction of the dimethyloluenes by stannous chloride and hydrochloric acid, T., 1047.
- Butescu, D.** See **Eugène Ludwig**.
- Butler, Gerald Snowden**. See **Horace Barratt Dunnielliff**.
- Butler, O.** See **Todd O. Smith**.
- Buttgenbach, H.**, minerals from Slat, Tunis, A., ii, 268.
- Buttgenbach, H.**, and **Camille Gillet**, cesarolite, a new mineral, A., ii, 406.
- Byk, Alfred**, theorem of corresponding state and the quantum theory of gases and liquids, A., ii, 163.
- C.**
- Cabrera, T.** See **E. Babe**.
- Cady, Hamilton P.**, and **E. J. Baldwin**, reactivity and conductance of benzene solutions, A., ii, 309.
- Cain, John Cannell**, obituary notice of, T., 533.
- Cake, W. Ellwood**. See **Hobart Hurd Willard**.
- Calcegni, Genaro**, solubility of sulphur in alkali hydroxides in the cold, A., ii, 195.
- Calderaro, E.** See **E. Oliveri-Mandala**.
- Caldwell, R. D.** See **H. C. Moore**.
- Cameron, Alexander Thomas**, and **M. S. Hollenberg**, the nature of the combination of the chlorine in urine, A., i, 78.
- Camis, M.**, physico-chemical examination of hæmoglobin; state of aggregation of hæmoglobin molecules, A., i, 821.
- Campbell, Colin**. See **Harold Bailey Dixon**.
- Campbell, J. M. H.**, and **Edward Palmer Foulton**, relation of oxyhæmoglobin to the carbon dioxide of the blood, A., i, 141.
- Campo, Angel del**, and **Miguel Catalán**, interpolation table for the calculation of spectral series, A., ii, 292.
- Canac, François**, study of crystals by X-rays, A., ii, 245.
- Canals, E.**, estimation of calcium and magnesium in different saline solutions, A., ii, 349.
- Cannari, G.**, thallic nitrite, A., ii, 47.
- Cannari, G.** See also **V. Cuttica**.
- Canó, José Marín**, and **José Baredo**, influence of the acid radicle on the anæsthetic properties of amino-alcohols, A., i, 384.
- Capaccioli, Assunta**. See **Mario Betti**.
- Cappenberg, H.**, analysis of shepherd's purse (*Capsella bursa pastoris*), A., ii, 720.
- Cappenberg, H.** See also **Heinrich Boruttau**.
- Cappe, Julian H.**, estimation of metallic aluminium and of aluminium oxide in the commercial metal, A., ii, 857.
- Cardini, Mario**, behaviour of nevraltine with quinine salts; easy method for its identification, A., ii, 664.
- Cardoso, Ettore**, vapour pressures of hydrogen sulphide, A., ii, 327.
- Carnot, P., P. Gérard**, and (*Mlle.*) **S. Moissonnier**, action of the urease from soja beans on the animal organism, A., i, 283.
- Carpenter, C. D.**, determination of melting points, especially of potassium chlorate, A., ii, 332.
- Carpenter, Henry Cort Harold**, and **Constance F. Elam**, stages in the recrystallisation of aluminium sheet on heating, and birth of crystals in strained metals and alloys, A., ii, 641.
- Carpioux, Em.** See **Ach. Grégoire**.
- Carracido, J. R.**, and **Antonio Madia-veitia**, constituents of *Lythrum salicaria*, A., i, 704.
- Carter, C. L.**, chemical investigation of mutton-bird oil. I., A., i, 833.
- Carver, Emmett K.** See **Theodore William Richards**.

- Cashmore, *Albert Eric*, Hamilton Mc-Combie, and Harold Archibald Scarborough, the velocity of reaction in mixed solvents. I. The velocity of saponification of two ethyl esters in ethyl alcohol-water mixtures, T., 970.
- Casparis, *P.*, [colour reaction for] lignified cell membranes, A., ii, 584.
- Casper, *Johannes*. See Jakob Meisenheimer.
- Cassel, *H.*, heat of mixture, A., ii, 166.
- Castan, *Pierre*. See André Pietet.
- Caste, *P.* See Louis Meunier.
- Catalán, *Miguel*. See Angel del Campo.
- Cerighelli, *Raoul*. See Léon Maquenne.
- Cerriotti, *Antonio*, estimation of alkaloids in cacao, A., ii, 470.
- Cernatesco, *Radu*, application of Dalton's law to concentrated solutions, A., ii, 576.
- Ceasna, *Ruth*. See Victor E. Nelson.
- Chaborski, *Gabriela*. See G. G. Longinescu.
- Chadwick, *James*, the charge on the atomic nucleus and the law of force, A., ii, 7.
- Chadwick, *James*. See also (Sir) Ernest Rutherford.
- Chalkley, *Lyman, jun.* See Morris S. Kharsasch.
- Challenger, *Frederick*, and Charles Frederick Allpress, organo-derivatives of bismuth. IV. The interaction of the halogen derivatives of tertiary aromatic bismuthines with organo-derivatives of magnesium and mercury, T., 913.
- Hallenor, *William Arthur Percival*. See Gilbert Thomas Morgan.
- Chambers, *Victor J.* See Otto W. Cook.
- Handler, *L. R.* See E. W. Schultz.
- Hao, *J. C.* See P. Karrer.
- Hapas, solubility of the isomeric nitro-anilines in *m*-xylene, A., i, 235.
- Hapin, *Harold Canning*. See Gregory Paul Baxter.
- Hapin, *Robert M.*, Denigès's test for the detection and estimation of methyl alcohol in the presence of ethyl alcohol, A., ii, 598.
- estimation of cresol by the phenol reagent of Folin and Denis, A., ii, 599.
- Hapman, *David Leonard*, and Herbert John George, abnormality of strong electrolytes, A., ii, 371.
- Hapman, *James E.* See William M. Thornton, jun.
- Hapman, *William Ronald*, the propagation of flame in mixtures of ethylene and air, T., 1677.
- Charpy, *Georges*, and Gaston Decors, the determination of the degree of oxidation of coals, A., ii, 709.
- Chattaway, *Frederick Daniel*, and Francis Earl Ray, the decomposition of tartaric acid by heat, T., 34.
- Chatterji, *Nitya Gopal*, volumetric estimation of mixtures of permanganate, dichromate, and chromic salts, A., ii, 713.
- Chaudron, *Georges*, reversible reactions of carbon monoxide on the oxides of iron, A., ii, 178.
- reversible reactions of hydrogen and carbon monoxide on the metallic oxides, A., ii, 584.
- Chaudun, (*Mlle.*) *Andrée*. See H. Colin.
- Chauffard, *P. Brodin*, and Grigaut, the action of arrest by the liver on the exogenous uric acid, A., i, 238.
- Chavanne, *Georges*, and Louis Jacques Simon, application of the critical temperature of solution in aniline to the analysis of light petroleum, A., ii, 354.
- Chelle, *L.*, normal thiocyanate content of the body, A., i, 206.
- Chemische Fabrik Griesheim-Elektron, preparation of ethyl alcohol from acetaldehyde, A., i, 155.
- preparation of acetaldehyde from acetylene, A., i, 395.
- Chemische Fabrik von Friedrich Heyden, preparation of hydantoins, A., i, 618, 619.
- Chemische Fabrik Rhenania Akt.-Ges., Bernhard Conrad Stuer, and Walther Grob, manufacture of additive and condensation products containing nitrogen from acetylene and ammonia, A., i, 852.
- Chemische Werke Grenzach, Akt.-Ges., preparation of a phenylated amino-hydrindene-carboxylic acid, A., i, 28.
- Chéneveau, *Charles*, the variation of the specific refraction of salts dissolved in dilute solutions, A., ii, 421.
- Cheng, *Y. C.* See William Draper Harkins.
- Cherchefeaky, *N.*, critical temperature of solution of hydrocarbons in aniline and its application to the analysis of light petroleum, A., ii, 280.
- Chevallier, *A.* See Ch. Porcher.
- Chevenard, *P.*, the action of additions on the anomaly of dilatation of ferro-nickels; application to iron-nickel-chromium alloys, A., ii, 336.
- relation between the anomalous dilatation and the thermal variation of magnetisation of ferromagnetic substances, A., ii, 484.

- Chevenard, P. See also A. Portevin.
 Chevry. See Jolibois.
- Chibnall, Albert Charles, and Samuel Barnett Schryver, nitrogenous metabolism of the higher plants. I. Isolation of proteins from leaves, A., i, 482.
- Child, C. D., a band spectrum from mercury vapour, A., ii, 3.
- Chrétien, E., and Henri Vandenberghe, estimation of hydrogen sulphide in natural waters, A., i, 214.
- Christensen, Harald R., and Niels Fellberg, estimation of potassium in soils and fertilisers, A., ii, 711.
- Christiansen, Johanne, a new method for the estimation of electrolytic conductivity of solutions, A., ii, 9.
- Christiansen, Johanne, and Seante Arrhenius, solubility of naphthalene in aqueous solutions of alcohols and fatty acids, A., ii, 385.
- Christiansen, Walter G., hypophosphorous acid preparation of arspen-amine (3:3'-diamino-4:4'-dihydroxy-arsenobenzene dihydrochloride), A., i, 70.
 indirect reduction of 3-amino-4-hydroxyphenylarsinic acid to salvarsan, A., i, 370.
- Christman, Adam A., and Howard B. Lewis, lipase. I. The hydrolysis of the esters of some dicarboxylic acids by the lipase of the liver, A., i, 755.
- Christopoulos, Takis C. See Friedrich Kehrman.
- Churchill, Helen. See W. H. Peterson.
- Ciacco, C., amino-nitrogen in the urine as indicated by the formol method, A., i, 834.
- Ciamician, Giacomo Luigi, and Riccardo Ciusa, considerations on the inner constitution of benzene and certain heterocyclic nuclei, A., i, 329.
- Ciamician, Giacomo Luigi, and Ciro Ravenna, function of alkaloids in plants, A., i, 85.
 influence of certain organic compounds on the development of plants. V., A., i, 483.
- Citron, H., a modification and simplification of Kjeldahl's method of nitrogen estimation, A., ii, 58.
 detection of acetone in urine, A., ii, 284.
- Ciusa, Riccardo, certain salts with *para*-, *ortho*-, and *meta*-quinonoid structure. II., A., i, 63.
 azopyrroles. I., A., i, 365.
 decomposition of ald-hydro-phenylhydrazones, A., i, 749.
- Ciusa, Riccardo, and A. Galizzi, some constituents of lignites, A., ii, 343.
- Ciusa, Riccardo, and G. Zerbini, Doehner's reaction. III., A., i, 195.
- Ciusa, Riccardo. See also Giacomo Luigi Ciamician.
- Claissen, Ludwig [with O. Tietze], 2:2-dimethylchroman, A., i, 283.
- Clapham, Henry William. See Harry Hepworth.
- Clarens, J., application of the laws of chemical kinetics to quantitative analysis; fractional estimation of tannins in general and tannins of wine in particular, A., ii, 719.
- Clark, Anne Barbara. See Harold Raistrick.
- Clark, E. P., preparation of galactose, A., i, 647.
- Clark, E. P. See also Phoebe A. Levene.
- Clark, George L., and R. B. Isley, corrosive action of chlorine-treated water. I. The effects of steel on the equilibrium: $\text{Cl} + \text{H}_2\text{O} \rightleftharpoons \text{HCl} + \text{HClO}$, and of products of the equilibrium on steel, A., ii, 94.
- Clark, George L., A. J. Quick, and William Draper Harkins, properties of subsidiary valency groups. I. Molecular volume relationships of the hydrates and amines of some cobalt compounds. II. Subsidiary group mobility as studied by the heat decomposition of some cobalt-aminines, A., ii, 116.
- Clark, Guy W., effects of citrate, malates, and phosphates on the calcium of the blood, A., i, 663.
- Clark, William Mansfield. See Hugo F. Zoller.
- Clarke, Hass Thacker. See Ivar J. Hultman.
- Clarke, J. R., effect of the rays from radium, X-rays, and ultra-violet rays on glass, A., ii, 569.
- Classen, Alexander, and O. Nef, revision of the atomic weight of bismuth, A., ii, 119.
- Claude, Georges, the actual state of the synthesis of ammonia by hyperpressures, A., ii, 258.
 preparation of hydrogen by the partial liquefaction of water-gas, A., ii, 692.
- Claudin, J. See Martin Battagay.
- Clemenger, Francis J. See Alexander Fleming.
- Clemens, Cecil A., application of the immersion refractometer to the analysis of aqueous salt solutions, A., ii, 650.

- Clementi, Amando**, new hypothesis on the physiological significance of the protamines and histones with respect to nuclear metabolism, A., i, 74.
- relationships between the peptidolytic activity of intestinal erepsin and the chemical constitution of the substrate, A., i, 144.
- Clendinning, Frederick William Jeffrey**, and **Albert Cherbury David Rivett**, the ternary system, ammonium chloride-manganous chloride-water, T., 1329.
- Clevenger, Joseph F.** See *Arao Viehoever*.
- Clibbens, Douglas Arthur.** See *British Dyestuffs Corporation, Ltd.*
- Clifford, Winifred Mary**, colorimetric estimation of carnosine, A., ii, 604.
- Clinton, Guy**, further light on the theory of the conductivity of solutions, A., ii, 618.
- Coetta, Max**, chemistry and pharmacology of digitoxin and its decomposition products, A., i, 39.
- logne, René**, and **J. Réglade**, chemical examination of the amniotic fluid, A., i, 754.
- ogne, René**, and **A. Richaud**, sodium fluoride or citrate as anti-coagulant in estimating blood sugar, A., ii, 355.
- otofski, Fritz**, compound formation and the electromotive behaviour of cerium in its alloys with iron and zinc, A., i, 203.
- ough, George William.** See *Frederick William Attack*.
- chrane, Donald C.**, influence of potassium permanganate on Kjeldahl nitrogen estimations, A., ii, 127.
- ehn, Alfred**, and **Hetariëh Tramm**, mechanism of photochemical processes, A., ii, 476.
- Key, Samuel**, the action of the chlorides of sulphur on substituted ethylenes; the action of propylene on sulphur monochloride and the synthesis of $\beta\beta'$ -dichlorodi-*n*-propyl sulphide, T., 94.
- the mechanism of the oxidation of drying oils as elucidated by a study of the true oxygen absorption. I. Linseed oil and its fatty acids, T., 1152.
- linolenic and hexabromostearic acids and some of their derivatives, T., 1306.
- the mechanism of the oxidation of drying oils as elucidated by a study of the true oxygen absorption. II. Linolenic and linolic acids, T., 1403.
- Coffey, Samuel**, and **Charles Frederick Ward**, the preparation of some allyl compounds, T., 1301.
- Coffignier, Ch.** See *Paul Nicolardot*.
- Cofman, Victor**, preparation of 3:5-di-iodosalicylic acid and its solubility in water, A., i, 177.
- Cohen, Clara**, the formation of acet aldehyde in the decomposition of sugar by moulds, A., i, 150.
- Cohen, Ernst, W. D. Helderman**, and **A. L. Th. Moesveld**, thermodynamics of normal elements. VIII., A., ii, 155.
- Cohen, Ernst, C. T. Kruisheer**, and **A. L. Th. Moesveld**, thermodynamics of normal elements. IX. Temperature formulae of normal elements and the specific heat of the salts contained in these elements, A., ii, 156.
- Cohen, Ernst**, and **J. J. Wolters**, thermodynamics of normal elements. VII. Temperature formula of the Weston normal element and the solubility curve of $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$, A., ii, 155.
- Cohen, Julius Berend**, and **Herbert Grace Crabtree**, structure and colour of the azine scarlets, T., 2055.
- Cohen, Julius Berend.** See also *Victor Froelicher, John Richard Scott*, and *Akira Shimomura*.
- Cohn, Felix**, influence of muscular work on the lactacidogen content of the red and white musculature of the rabbit, A., i, 529.
- Cohn, Robert**, detection of formaldehyde by resorcinol and sulphuric acid, A., ii, 663.
- Coisset, P.** See *Jh. Martinet*.
- Colin, H.**, some corollaries of the laws of hydrolysis by enzymes, A., ii, 807.
- Colin, H.**, and (*Mlle.*) **Andrie Chaudun**, application of the law of hydrolysis to the determination of molecular weights, A., ii, 255.
- Collatz, F. A.**, and **Clyde H. Bailey**, activity of phytase as determined by the specific conductivity of phytin-phytase solutions, A., i, 369.
- Collett, M. E.**, the toxicity of acids to infusoria. II. and III., A., i, 835.
- Collie, John Norman**, and (*Miss*) **Amy Ada Beatrice Reilly**, a new type of iodine compound, T., 1559.
- Collins, Hawkscorth**, the fundamental constants of nature, A., ii, 86.
- the relative volumes of the chemical elements, A., ii, 168.
- Collip, J. B.**, alkali reserve of the blood of lower vertebrates, A., i, 379.

- Collip, *J. B.*, the acid-base exchange between the plasma and the red blood cells, *A.*, i, 379.
- Colver, *C. W.*, and *William Albert Noyes*, synthesis of anthracene from naphthalene, *A.*, i, 409.
- Compton, *Arthur*, mechanism of enzyme action. I. Role of the reaction of the medium in fixing the optimum temperature of a ferment, *A.*, i, 137.
- Compton, *Arthur*. See also *Gabriel Bertrand*.
- Compton, *Arthur H.*, the degradation of γ -ray activity, *A.*, ii, 366.
- Compton, *Arthur H.*, and *C. C. van Voorhis*, cathode fall in neon, *A.*, ii, 7.
- Compton, *Karl T.*, and *E. G. Lilly*, excitation of the spectrum of helium, *A.*, ii, 2.
- Compton, *Karl T.*, and *P. S. Olmstead*, radiating and ionisation potentials of hydrogen, *A.*, ii, 368.
- Compton, *Karl T.* See also *H. D. Smyth*.
- Conant, *James B.*, and *Alexander D. Macdonald*, additive reactions of phosphorus haloids. I. The mechanism of the reaction of the trichloride with benzaldehyde, *A.*, i, 69.
- Connell, *V. B.*, simple form of Kipp's apparatus for the generation of hydrogen sulphide, *A.*, ii, 109.
- Conradt, *Karl*. See *Wilhelm Strecker*.
- Consonno, *Fortunato*, and *C. Apostolo*, constitution of phenolphthalein, *A.*, i, 346.
- Consonno, *Fortunato*, and *A. Cruto*, synthesis of basic colouring matters by the condensation of acetylene with aromatic bases, *A.*, i, 679.
- Contardi, *Angelo*, certain transformations of trioxymethylene, *A.*, i, 93.
- D.M. (diphenylamine arsenious chloride), *A.*, i, 174.
- Cook, *James Wilfred*. See *Eduard de Barry Barnett*.
- Cook, *Otto W.*, and *Victor J. Chambers*, the condensation of acetylene with benzene and its derivatives in the presence of aluminium chloride, *A.*, i, 332.
- Cooke, *William Terment*, influence of sodium chloride and sodium sulphate on the solubility in water of sodium β -naphthalenesulphonate, *A.*, i, 334.
- Cooper, *Evelyn Ashley*, and *Hilda Walker*, the nature of the reducing substance in human blood, *A.*, i, 698.
- Cooper, *Herman C.* See *Floyd H. Edminister*.
- Copaux, *Hippolyte*, rapid process for estimating phosphoric acid, *A.*, ii, 707.
- Copisarow, *Maurice*, the Friedel-Crafts' reaction. III. Migration of alkyl groups in the benzene nucleus, *T.*, 1806.
- Copisarow, *Maurice* [with *Cyril Norman Hugh Long*], the Friedel-Crafts' reaction. II. Migration of halogen atoms in the benzene nucleus, *T.*, 442.
- Cordebard, *H.*, method of estimating and verifying the purity of organic compounds by oxidation with chromic acid, *A.*, ii, 280.
- Cordes, *Fr.* See *A. Machens*.
- Cordon, *Eduard B.* See *James Munroe Bell*.
- Corneil, *Charles Edwin*, and *C. J. Eastland*, the official method for the estimation of hydrocyanic acid, *A.*, ii, 526.
- Corfield, *Charles Edwin*, and *Elgie Woodward*, estimation of sodium arsenate, *A.*, ii, 519.
- Cornubert, *R.*, spectro-chemical study of the allyl- and methylallylcyclohexan-2-ones, *A.*, ii, 5.
- oxidation of α -methyl- α -allylcyclohexanone by permanganate in alkaline solution, *A.*, i, 422.
- (the allylcyclohexanones and the methylallylcyclohexanones, *A.*, i, 730).
- Cornubert, *R.* See also *André Frochet*.
- Corral, *José María de*, effect of temperature on the reaction of blood, *A.*, i, 379.
- Corti, *Hercules*, estimation of tin in cassiterite, *A.*, ii, 416.
- Corvi, *A.* See *Hermann Standinger*.
- Costa, *Joseph*. See *Ernest Little*.
- Coster, *Dirk*, precision measurements in the *L* series of the heavier elements, *A.*, ii, 363.
- the fine structure of the X-ray series, *A.*, ii, 532.
- Couch, *Henry B.* See *James Fleet Norris*.
- Couroux, *P.* See *Marcel Sommelet*.
- Courtois, *Ch.* See *François Bourion*.
- Courtonne, *H.*, the contrary action of soluble chlorides and sulphates on starchy materials, *A.*, i, 96.
- Couvert, *H.* See *Jacob Böseken*.
- Coward, *Katharine Hope*, and *Jack Cecil Drummond*, researches on the fat-soluble accessory substance. IV. Nuts as a source of vitamin-A, *A.*, i, 87.
- formation of vitamin-A in living plant tissues, *A.*, i, 837.
- Coward, *Katharine Hope*. See also *Jack Cecil Drummond*.

- Cox, *Henry Edward*, the influence of the solvent on the temperature-coefficient of certain reactions; a test of the radiation hypothesis, T., 142.
- Crabtree, *Herbert Grace*. See *Julius Berend Cohen*.
- Cranston, *John Arnold*, and *Robert Alexander Burnett*, the adsorption of thorium-B and thorium-C by ferric hydroxide, T., 2036.
- Crehore, *Albert C.*, an atomic model based on electromagnetic theory. I., A., ii, 632.
- Crenshaw, *J. L.* See *Roger Frederick Brunel*.
- Cribier, *J.*, new procedure for the estimation of arsenic, A., ii, 653.
- Cristol. See *Galaviella*.
- Brittenden, *E. C.* See *E. B. Rosa*.
- Tröcker, *Ernest C.*, significance of "lignin" colour reactions, A., i, 839.
- Crockett, *William G.* See *Paul H. M.-P. Brinton*.
- Roll, *Hilda M.* See *Victor Caryl Myers*.
- Crommelin, *Claude Auguste*, the importance of experiments at very low temperatures, A., ii, 573.
- Crommelin, *Claude Auguste*. See also *Émile Mathias*.
- Crompton, *Holland*, and (*Miss*) *Phyllis Mary Triffitt*, dichloroacetates and chlorobromoacetates from $\alpha\beta$ -dichlorovinyl ethyl ether, T., 1874.
- Crossley, *Arthur William*, and (*Miss*) *Nora Renouf*, 1:1-dimethylcyclohexane from methylheptenone, T., 271.
- Crouzier, *P.* See *Victor Grignard*.
- Crowther, *J. Arnold*, β -radiation, A., ii, 673.
- Cruckshank, *J.*, adsorption of aniline dyes and inorganic salts by solutions of lecithin, A., ii, 89.
- Crussard, *L.*, the laws governing the propagation of combustions, A., ii, 32.
- Cuto, *A.* See *Fortunato Consonno*.
- Czanyi, *Wilhelm*, the indicator properties of two new phthaleins (1:2:3-xylenolphthalein and α -naphtholphthalein), A., ii, 270.
- Albertson, *James B.* See *William H. Ross*.
- Cummins, *A. B.* See *Walter Pearson Kelley*.
- Curie, (*Mlle.*) *Irène*, the atomic weight of chlorine in some minerals, A., ii, 396.
- Curie, *Maurice*, action of the red and infra-red rays on phosphorescent substances, A., ii, 233.
- action of infra-red rays on phosphorescence, A., ii, 616.
- Arti, *A.* See *Michèle Gina*.
- Curtius, *Theodor*, and *Friedrich Wilhelm Haas*, the hydrazide and azide of benzylsulphonic acid, A., i, 747.
- Curtius, *Theodor*, and *Wilhelm Sieber*, conversion of malonic acid into glycine and of methylmalonic acid into α -alanine, A., i, 653.
- Curtman, *Louis J.*, and *D. Hart*, the preparation and properties of some salts of uric acid, A., i, 519.
- Curtman, *Louis J.*, and *N. H. Hecht*, approximate estimation of iron and manganese in systematic qualitative analysis, A., ii, 522.
- Cushny, *Arthur Robertson*, physiological action of optical isomerides. VII. Hyoscines and hyoscyamines, A., i, 289.
- Cusmano, *Guido*, intramolecular condensations by means of the oxyazo-group, A., i, 132.
- Cusmano, *Guido*, and *L. Della Nave*, partial reduction of nitroazoxybenzenes by means of hydrogen and platinum, A., i, 622.
- Cuttat, *Lion*. See *Mareel Duboux*.
- Cuttica, *V.*, and *G. Canneri*, thallous ferrieyanide, A., i, 322.
- Cuy, *Eustace J.*, comparison of Tammann's and Cuy's theories of the periodic irregularities of physical properties in homologous series, A., ii, 429.
- valency theory of G. Lewis and the asymmetry of the water molecule, A., ii, 584.
- preparation of colloidal manganese dioxide, A., ii, 612.

D.

- Daesve, *Karl*, the calculation of the positions of eutectic points and solubility limits in systems containing iron, A., ii, 454.
- Dains, *Frank Burnett*, *Roy Irvin*, and *C. G. Harrel*, reaction of the formamidines. VIII. Some thiazolidone derivatives, A., i, 362.
- Dains, *Frank Burnett*, and *Walter S. Long*, the reactions of the formamidines. IX. The synthesis of 5-phenylpyrazole-4-carboxylic acid, A., i, 518.
- Dains, *Frank Burnett*, and *E. Wertheim*, action of ammonia and amines on the substituted carbamides and urethanes. II. Allophanic ester, A., i, 61.
- Dakin, *Henry Drysdale*, amino-acids of gelatin A., i, 66.

- Dale, Henry Hallett, and Charles Lovatt Evans**, colorimetric determination of the reaction of blood by dialysis, A., i, 142.
- Dalmer, O.** See **Adolf Windaus**.
- Damiens, A.**, bromine and chlorine existing normally in animal tissues, A., i, 77.
bromine normally present in animal tissues, A., i, 476.
the sub-iodide of tellurium, TeI_2 ; the system, iodine-tellurium, A., ii, 110.
the system, iodine-tellurium; study of the vaporisation, A., ii, 257.
tellurium tetraiodide, A., ii, 399.
the system, bromine-tellurium; the nature of tellurium sub-bromide, A., ii, 546.
tellurium sub-bromide, A., ii, 636.
- Daniel, M.** See **Th. Sabalitschka**.
- Daniels, Farrington, and Elmer H. Johnston**, thermal decomposition of gaseous nitrogen pentoxide: a unimolecular reaction, A., ii, 249.
photochemical decomposition of nitrogen pentoxide, A., ii, 249.
- Dardel, Jean Henri.** See **Jean Piccard**.
- Darke, W. F., James William McBain, and Cyril Sebastian Salmon**, ultra-microscopic structure of soaps, A., ii, 312.
- Darmois, E.**, the sodium and ammonium molybdomalates, A., i, 539.
the dispersion of the refraction of hydrocarbons, A., ii, 1.
the specific dispersion of hydrocarbons, A., ii, 361.
- Dart, A. E.** See **Carl L. A. Schmidt**.
- Das, Ananda Kishore, and Bijendra Nath Ghosh**, azo-compounds from diketohydrindene, A., i, 896.
- Dasannacharya, B., and John Joseph Sudborough**, alcoholysis. IV. Alcoholysis of esters of $\alpha\beta$ -unsaturated acids and of the corresponding saturated esters, A., i, 667.
- Datta, A. K.** See **Nil' stan Dhar**.
- Datta, Rasik Lal, and Jagdish Chandra Bhoumik**, halogenation. XX. The replacement of phenolic acid groups by halogens, A., i, 331.
- Datta, Sankarajoy**, the vacuum arc spectra of sodium and potassium, A., ii, 285.
spectra of the alkaline-earth fluorides and their relation to each other, A., ii, 529.
variation of resistance of selenium with temperature, A., ii, 570.
- Daudt, Herbert Wilkens**, the Kjeldahl method, A., ii, 462.
- Daudt, Herbert Wilkens.** See also **Isaac King Phelps**.
- Dautwitz, W.**, new micro-combustion furnace for carbon, hydrogen and nitrogen estimations, A., ii, 131.
- Dauvillier, A.**, the L-series of uranium and the principle of combination in X-ray spectra, A., ii, 421.
the principle of combination and the absorption rays in X-ray spectra, A., ii, 475.
the electronic structure of the heavy atoms and of their spectral lines, A., ii, 669.
- Dauvillier, A., and Louis de Broglie**, the distribution of the electrons in the heavy atoms, A., ii, 532.
- Dauvillier, A.** See also **Louis de Broglie**.
- Davenport, Audrey.** See **Edwin Birwa Fred**.
- David, W. T.**, internal energy of inflammable mixtures of coal gas and air after explosion, A., ii, 85.
intra-molecular energy during combustion, A., ii, 687.
- Davidson, Arthur W.** See **James Kendall**.
- Davis, H. W., J. B. S. Haldane, and Ernest Laurence Kennaway**, regulation of the blood's alkalinity, A., i, 142.
- Davies, Ann Catherine.** See **Frank Horton**.
- Davies, William**, the cumulative effect of the chlorine atom and the methyl and sulphonyl chloride groups on substitution in the benzene nucleus. I and II, T., 853, 876.
- Davis, A. R., and Stanley Rosier Benedict**, a crystalline uric acid compound in ox blood, A., i, 633.
- Davis, Anne W.** See **Isis N. Edman**.
- Davis, Oliver Charles Minty, and Frederic William Rixon**, chromogenetic properties of sulphur and certain other elements, A., ii, 530.
- Davis, Tenney L.**, action of sulphuric acid on dicyandiamide, A., i, 321.
- Davis, Tenney L., David E. Worrall, N. L. Drake, R. W. Helmkamp, and A. M. Young**, rôle of mercuric nitrate in the "catalysed" nitration of aromatic substances. I, A., i, 338.
- Dean, Arthur L., and Richard Wrenshall**, fractionation of chaulmoogra oil, A., i, 91.
- Deberne, Aubré**, the diffraction of X-rays by liquids, A., ii, 531.

- Debourdeaux, Léon**, estimation of arsenic and phosphoric acids in the presence of large amounts of salts. VI. Applications, A., ii, 130.
- Debray, R.** See *M. Loeper*.
- Decarrière, Eugène**, the rôle of gaseous impurities in the catalytic oxidation of ammonia, A., ii, 503, 546.
- Decker, W.** See *Hermann Thoma*.
- Décombe**, the theory of the pile, A., ii, 676.
- Decorps, Gaston.** See *Georges Charpy*.
- Dede, L.** See *Heinrich Bechhold*.
- Dehn, Walter.** See *Karl Kindler*.
- Deiss, Eugen.** See *Fritz Flade*.
- Dejean, P.**, the transformation of iron at the Curie point, A., ii, 573.
- Dejust, L.**, limits of the precipitation of mucin by acids and by zinc salts, A., i, 199.
- Dekker, P.** See *A. van Rossem*.
- Delanney, P.**, the extraction of glucosides from some indigenous orchids; identification of these glucosides with irologlossin, A., i, 296.
- Délépine, Marcel**, active racemic substances, A., ii, 567.
- Délépine, Marcel, Fleury, and Lucien Ville**, $\alpha\beta$ -dichlorodiethyl sulphide, A., i, 494.
- Délépine, Marcel, and Pierre Jaffaux**, two homologues of ethylene sulphide; $\alpha\beta$ -thiopropene and thiobutane, A., i, 156.
- Della Nave, L.** See *Guido Cusmano*.
- Delmas, L.** See *Ernest Berger*.
- Demoussy, Ém.** See *Léon Maquenne*.
- Dempster, A. J.**, positive-ray analysis of magnesium, A., ii, 402.
- Denham, William Smith**, the methylation of cellulose. III. Homogeneity of product and limit of methylation, T., 77.
- Denigès, Georges**, the microchemical reactions of iodic acid, A., ii, 126.
- detection of small quantities of hydrocyanic acid from cyanogenetic glucosides, A., ii, 859.
- Denis, Willey**, the substitution of turbidimetry for nephelometry in certain biochemical methods of analysis, A., ii, 555.
- Denis, Willey, and Warren R. Sisson**, the chlorine content of milk and blood after the ingestion of sodium chloride, A., i, 531.
- Denis, Willey, and Fritz B. Talbot**, calcium in the blood of children, A., i, 828.
- Dervin and Oimer**, ammoniacal silver carbonate, A., ii, 507.
- Derx, H. G.** See *Jacob Böeseken*.
- Deschamps, André**, dimethylpropylcarbinol and some of its derivatives, A., i, 89.
- Desgrez, Alexandre, and Henri Bierry**, nitrogenous equilibrium and carbohydrates of the food ration, A., i, 144.
- Desgrez, Alexandre, Guillemard, and Hemmerdinger**, the fixation of carbon monoxide diluted and carried along by a current of air, A., ii, 547.
- Desgrez, Alexandre, Guillemard, and Savès**, the purification of air containing certain toxic gases, A., ii, 107.
- Desgrez, Alexandre, and R. Moog**, influence of some organic bases and their hydrochlorides on the activity of pancreatic amylase, A., i, 282.
- Desmet, G.** See *Pierre Bruylants*.
- Desvergues, Louis**, estimation of the composition of ternary mixtures; ether-water-alcohol, A., ii, 600.
- Detrie, J.** See *Gustave Vavon*.
- Deutsche Gold- & Silber-Scheidanstalt vorm. Rössler**, preparation of acetaldehyde from acetylene and steam, A., i, 543.
- Deutschmann, W.**, density and specific rotation of mixtures of liquids with one optically active constituent, A., ii, 146.
- Devrient, W.**, the fate of salicylic acid and some of its derivatives in the organism, A., i, 909.
- Dozani, Serafino**, occurrence of thiocyanic acid in plants, A., i, 643.
- Dezeine, F.**, absorption by coagulation, A., ii, 88.
- Dhar, Nilrata**, catalysis. IX. Thermal and photochemical reactions, A., ii, 37.
- catalysis. X. Explanation of some abnormally large and small temperature-coefficients, A., ii, 37.
- catalysis. XII. Some induced reactions and their mechanism, A., ii, 391.
- Dhar, Nilrata** [with *A. K. Datta and D. N. Bhattacharya*], catalysis. VIII., A., ii, 36.
- Dhéré, Charles**, haemocyanin. V. Absorption spectrum of oxyhaemocyanin in the ultra-violet, A., i, 626.
- Dhéré, Charles, and A. Schneider**, reduction of oxyhaemocyanin, and the compound of haemocyanin with nitric oxide, A., i, 366.
- haemocyanin, A., i, 625.
- Dieckmann, Theodor**, estimation of titanium in iron and steel, A., ii, 597.
- Dieckmann, Walter**, the estimation of enols by Hieber's copper acetate method, A., ii, 716.

- Diehl, W.** See *Hans Rupe*.
- Diels, Otto**, azodicarboxylic ester as a reagent for the introduction of the hydrazine radicle into the aromatic nucleus. I. Azo-ester and 8-naphthylamine, A., i, 280.
- Diels, Otto**, and **Erich Borgwardt**, course of the reaction between malononitrile and nitrous acid, A., i, 543.
- Diels, Otto**, and **Walter Poetsch**, course of the reduction of benzylidenediacetylmoxime and the preparation of benzylidiacetyl, A., i, 675.
- Diergart, Paul**, date of the discovery of tellurium and bromine, A., ii, 42.
- Dietrich, Carl**. See *Otto Fischer*.
- Dijk, J. C. van**. See *I. M. Kolthoff*.
- Dill, D. B.**, chemical study of (i) certain Pacific coast fishes; (ii) the California sardine (*Sardinia caerulea*), A., i, 824.
- Dilthey, Walther** [with *G. Bauriedel, B. Burger, G. Geisselbrecht, F. von Ibach, F. Kiefer, A. Seeger, O. Simon, K. Taucher, and J. Winkler*], arylated pyridines and their relationships to the corresponding pyrylium compounds. II., A., i, 735.
- Dilthey, Walther** [with *G. Bauriedel, G. Geisselbrecht, A. Seeger, and J. Winkler*], pyrylium compounds. VIII., A., i, 188.
- Dilthey, Walther**, and **Chr. Bloss**, pyrylium compounds. IX. Pyrylium salts with meta-substituents, A., i, 190.
- Dilthey, Walther**, and **B. Burger**, pyrylium compounds. X. Violones, A., i, 429.
- Dimroth, Otto**, mercuration of aromatic compounds, A., i, 697.
- Dingle, Herbert**, revision of series in the arc spectrum of mercury, A., ii, 668.
- Dixon, Henry Horatio**, and **Nigel G. Ball**, a determination, by means of a differential calorimeter, of the heat produced during the inversion of sucrose, A., ii, 86.
- Dixon, Harold Dudley**, *Chas Campbell*, and **Albert Parker**, velocity of sound in gases at high temperatures and the ratio of the specific heats, A., ii, 621.
- Dobbie, (Sir) James Johnston**, and **John Jacob Fox**, absorption of light by elements in a state of vapour; the halogens, A., ii, 566.
- Dodd, A. H.**, granidine carbonate as a standard alkali, A., ii, 409.
- Dodds, E. C.**, variations in alveolar carbon dioxide pressure in relation to meals, A., i, 284.
- Doerinkel, Friedrich**, and **Max Werner**, the specific heat of technical copper-zinc alloys at higher temperatures, A., ii, 428.
- Doerr, R.**, oligodynamy of silver. III., A., i, 209.
- colloid chemical action of salts of the rare earths and their relationship to the precipitation reaction of the anti-substances, A., ii, 92.
- Dohme, Alfred R. L.**, assay of aconitine, A., ii, 604.
- Doisy, Edward A.**, and **Richard D. Bell**, the estimation of sodium in blood, A., ii, 413.
- Doisy, Edward A.**, and **Emily P. Eaton**, relation of the migration of ions between cells and plasma to the transport of carbon dioxide, A., i, 753.
- Doisy, Edward A.** See also *Richard D. Bell*.
- Dolch, Paul**, heat changes in the formation of "nitrolime," A., ii, 17.
- Dommer, Walter**. See *Burchardt Helfferich*.
- Donard, E.** See *Ernest Fourneau*.
- Donleavy, J. J.** See *Arthur Joseph Hill*.
- Dore, W. H.**, proximate analysis of hardwoods; *Quercus agrifolia*, A., i, 87.
- Dornier, O.** See *Jh. Martinet*.
- Dorach, Hans**, device for preventing back-flow of water from water-pumps, A., ii, 105.
- Dorsey, N. Ernest**, a radioactive quantity requiring a name, A., ii, 675.
- Doubleday, (Miss) Ida**. See *Tom Sidney Moore*.
- Doublet, H.**, and **L. Lescœur**, urea and nitrous acid, A., ii, 70.
- Doughty, Howard Waters**, and **Benjamin Freeman**, trihalogen-methyl reactions. III. The use of the silver cathode in electro-deposition of copper, A., ii, 414.
- Dowell, Carr T.**, and **Paul Menail**, nitrogen distribution of the proteins extracted by dilute alkali from pecans, peanuts, kafir, and lucerne, A., i, 644.
- Downes, Helen Rapert**. See *Marie Reimer*.
- Downey, Thomas B.** See *Alexander Lowy*.
- Dox, Arthur Wayland**, and **Lester Todd**, spiroprymidines. I. cycloButane-1:5-spiroprymidines, A., i, 360.
- spiroprymidines. II. cycloHexane-1:5-spiroprymidines, A., i, 740.

- Doyon, Maurice**, use of chloroform for the preparation of active nucleoproteins and nucleic acids in vitro in blood; complexity of the action of nucleic acids in vitro, A., i, 521.
- anti-thrombin, a secretion of nuclear origin; the anti-coagulating properties of nucleic acids, A., i, 699.
- Dragoin, J.** See **E. Fauré-Fremiet**.
- Drake, N. L.** See **Tenney L. Davis**.
- Drew, Harry Dugald Keith.** See **Gilbert Thomas Morgan**.
- Dreyer, Ferdinand.** See **Max Bergmann**.
- Driver, John,** and **James Brierley Firth**, the sorption of alcohol and water by animal charcoal, T., 1126.
- Droste, D.**, harmony of the atomic weights and mathematics, A., ii, 101.
- Druce, John Gerald Frederick**, ethylstannic acid and derivatives, T., 758.
- Drucker, Carl**, dissociation of ternary electrolytes, A., ii, 161.
- Drummond, Jack Cecil,** and **Katharine Hope Coward**, vitamin-A. VI. Effect of heat and oxygen on the nutritive value of butter, A., i, 475.
- Drummond, Jack Cecil.** See also **Katharine Hope Coward**.
- Duane, William, Hugo Fricke,** and **Wilhelm Stenström**, absorption of X-rays by chemical elements of high atomic numbers, A., ii, 145.
- Duane, William,** and **R. A. Patterson**, the X-ray spectra of tungsten, A., ii, 363.
- Dubin, Harry E.** See **Casimir Funk**.
- Dubois, A.**, the constitution of smalt, A., ii, 403.
- Dubose, André**, estimation of thiocyanate in the presence of salts which precipitate silver nitrate, A., ii, 718.
- Dubose, André,** and **A. Luttringer**, preparation of bornyl formate by the action of sodium formate and powdered zinc on solid pinene hydrochloride in the presence of an excess of formic acid, A., i, 115.
- preparation of bornyl formate by the action of sodium formate and iron filings on solid pinene hydrochloride in the presence of an excess of formic acid, A., i, 115.
- preparation of bornyl esters and subsequently of camphor from oil of turpentine, propionic acid, and an alkaline peroxide, A., i, 115.
- preparation of the bornyl esters of propionic, butyric, and valeric acids, A., i, 115.
- the preparation of camphor from oil of turpentine by means of salicylic acid and an alkaline peroxide, A., i, 116.
- Dubose, André.** See also **A. Luttringer**.
- Duboux, Marcel,** and **Léon Cuttat**, solubilities of some active and racemic tartrates and malates, A., i, 768.
- Dubovitz, Hugo**, alteration of sodium carbonate in air, A., ii, 639.
- Dubriay, René**, action of boric acid on glycerol and the multivalent alcohols; application of a new physico-chemical volumetric method, A., i, 535.
- miscibility of phenol and some mineral solutions; analytical applications, A., ii, 282.
- physico-chemical volumetric analysis, A., ii, 344.
- Dubsky, J. V.** See **Hilmar Johannes Backer**.
- Duclaux, J.**, cellulose and its esters. II. Stability and viscosity of cellulose nitrates, A., i, 545.
- Duclaux, J.,** and **P. Jeantet**, absorption spectrum of oxygen, A., ii, 613.
- Duclaux, J.** See also **A. Lanzenberg**.
- Duclaux, (Mme.) J.** See **René Wurmser**.
- Dudley, Harold Ward**, aminoacetylcholine esters. I. Glycylcholine, T., 1256.
- Dudley, Harold Ward,** and **Charles Lovatt Evans**, the preparation and recrystallisation of oxyhaemoglobin, A., i, 749.
- Duff, James Cooper**, complex metallic amines. V. *cis*-Succinatodithylenediaminecobaltic salts, and other cobaltamine salts containing a seven-membered ring in the complex, T., 385.
- complex metallic amines. VI. *cis*-Phthalato-, *cis*-homophthalato- and other dithylenediaminecobaltic salts, T., 1962.
- Dufraisse, Charles**, ethylenic isomerism of the ω -brominated styrenes, A., i, 17, 104.
- the so-called true dibenzoylmethane of J. Wislicenus, A., i, 114.
- auto-oxidation of α -bromostyrene, A., i, 165.
- Dufraisse, Charles.** See also **Charles Moureu**.
- Duffon, Arthur Pellet**, the separation of miscible liquids by distillation, T., 1988; A., ii, 302.
- Duin, C. F. van**, the sensitiveness of hexanitrodiphenyl to mechanical influences compared with that of hexanitro-compounds of similar constitution, A., i, 19.
- the identification of sulphonic acids in the state of their salts formed with aromatic bases, A., ii, 221.
- Duin, C. F. van.** See also **Hugo Rudolph Krnyk**.

- Dumesnil, Philippe**, ethyl hydrogen diethylmalonate, A., i, 391.
- Duncliff, Horace Barratt**, and **Gerald Snodden Butler**, ethyl hydrogen sulphate, T., 1384.
- Dunnill, Sydney**, overvoltage. Part I. A comparison of the methods of determination, especially as applied to the mercury cathode, T., 1081.
- Dunoyer, Louis**, a new spectrum of cesium, A., ii, 529.
- Dunoyer, Louis**, a new spectrum of induction spectrum of rubidium, A., ii, 610.
- Dupont, Georges**, the acid constituents of the gem of the pine; *d*- and *l*-pimaric acids, A., i, 487.
- the acid constituents of the resin of the maritime pine, A., i, 510.
- the acid constituents of the resin of the maritime pine; isomerisation of the pimaric acids, A., i, 510.
- Dupré, F. H.**, and **Percy Vivian Dupré**, reactions of mercury fulminate with sodium thiosulphate, A., i, 232.
- Dupré, Percy Vivian**. See **F. H. Dupré**.
- Dupuy**. See **Paul Pascal**.
- Dupuy, Eugène L.**, influence of forging on the electrical resistance of steel, A., ii, 481.
- Durand, J.**, action of the alkali metals on the ethers, A., i, 89.
- decomposition of some metallic alkyl-oxides and phenoxides by heat, A., i, 492.
- Dushman, Saul**, a theory of chemical reactivity: calculation of rates of reactions and equilibrium constants, A., ii, 315.
- Dutcher, R. Adams, H. M. Harshaw**, and **J. S. Hall**, the effect of heat and oxidation on the antiscorbutic vitamin, A., i, 839.
- Dutoit, P.** See **August L. Bernoulli**.
- Dutt, Pavitra Kumar, Hugh Robinson Whitehead**, and **Arthur Wormall**, the action of diazo-salts on aromatic sulph-onamides, Part I, T., 2088.
- Dutt, Sikkibhushan**. See **Edwin Roy Watson**.
- Dye, Marie**. See **Katharine Blunt**.
- Dzielowski, Karol** [with **Z. Lemberger, J. Podgórska**, and **J. Suszka**], three new hydrocarbons, leucacene, rhodacene, and chalkacene, A., i, 105.
- Dzimal, Johanna**. See **Alois Zinke**.
- E.**
- Eakle, Arthur Starr**, jurupaite, a new mineral, A., ii, 702.
- Eastland, C. J.** See **Charles Edwin Corfield**.
- Eaton, Emily P.** See **Edward A. Doisy**.
- Eberhard, August**, methyl-red as indicator in the estimation of alkaloids, A., ii, 225.
- Eberlein, W.** See **Walther Borsche**.
- Eberstadt, Otto**. See **Emil Knoevenagel**.
- Ebler, Erich**, and **A. J. van Rhyen**, the opening up of earths poor in radium, A., ii, 616.
- Eck, Pider Noach van**, detection of blood in faeces, A., ii, 472.
- Eckert, Alfred**, pentabromobenzene, A., i, 854.
- octachloroanthraquinone, A., i, 870.
- Eckert, Alfred**, and **Gertrud Endler**, derivatives of 2-methylanthraquinone, A., i, 871.
- Eckert, Alfred**, and **F. Seidel**, replaceability of the halogen in halogen-substituted phthalic acids, A., i, 862.
- Eckert, G.** See **Fritz Arndt**.
- Eckweiler, Herbert, Helen Miller Noyes**, and **Kaufman George Falk**, the amphoteric properties of some amino-acids and peptides, A., i, 316.
- Eddy, N. B.**, internal secretion of the spleen, A., i, 906.
- Eddy, Walter H., Hattie L. Heft, Helen C. Stevenson**, and **Ruth Johnson**, vitamin content. II. The yeast test as a measure of vitamin-B, A., i, 758.
- Edie, Edward Stafford**, digestion of fibrin and caseinogen by trypsin, A., i, 750.
- Edlbacher, Siegfried**, the free amino-groups of the proteins. II. and III, A., i, 136, 139.
- Edminster, Floyd H.**, and **Herman C. Cooper**, chemistry and crystallography of some fluorides of cobalt, nickel, manganese, and copper, A., ii, 115.
- Edwards, Junius David**, and **T. A. Moormann**, density of aluminium from 20° to 1000°, A., ii, 114.
- Ekfront, Ivan**. See **Friedrich Kehrman**.
- Ege, Rich.**, physiology of the blood sugar. V. How is the partition of dextrose between the red corpuscles and the outside fluid to be explained? A., i, 285.
- Ege, Rich.**, and **Valdemar Henriques**, the dextrose content of arterial and venous blood from muscle, A., i, 905.
- Eggert, John**, velocity of chemical reactions, A., ii, 442.
- Eggert, John**, and **B. Scharnow**, Landolt's reaction. II. Some reactions analogous to the Landolt reaction, A., ii, 636.
- lecture experiments on the kinetics of reactions in solutions (applied to the Landolt reaction), A., ii, 691.

- Eggert, Sophie.** See *Carl Tubandt*.
- Egnér, Hans,** viscosity and flocculation of coarse suspensions, A., ii, 382.
- Ehlers, Walther, and Peter Paul Koch,** action of light on silver bromide. I., A., ii, 289.
- Ehn, Marie.** See *W. C. Thro*.
- Ehrhardt, Alfred.** See *Emil Fromm*.
- Ehrhardt, Udo.** See *Franz Fischer*.
- Einbeck, Hans, and Ludwig Jablonski,** 2:4:6-trinitroresorcinol [styphnic acid], A., i, 505.
- Einstein, Albert,** theory of the viscosity of heterogeneous systems, A., ii, 19. motion of sound in partly dissociated gases, A., ii, 249.
- Eisenhardt, W.,** quantitative estimation of blood sugar with the aid of methylene-blue, A., ii, 283.
- Eisenlohr, Fritz,** the molecular refraction coefficient, its additivity character and its use for determining constitution. II. The calculation of refractive indices of aromatic hydrocarbons, A., ii, 1. the molecular refraction coefficient, its additivity and its use for determining constitution. III. Numerical relationships in the series of polymethylene compounds, A., ii, 229.
- Ekholm, K. E.** See *Ostian Aschan*.
- Elam, Constance F.** See *Henry Cort Harold Carpenter*.
- Elbers, W. F.** See *Kurt Heinrich Meyer*.
- Elbs, Karl, and P. Neher,** stability of persulphates, A., ii, 693.
- Eliasberg, Paul.** See *S. Kostychev*.
- Eller, Wilhelm,** synthetic and natural humic acids, A., i, 506.
- Ellinger, Philipp,** the mechanism of the formation of methemoglobin through acetanilide and its derivatives, A., i, 135.
- Elliot, Felix A., and Samuel Edward Sheppard,** the gold number of commercial gelatins, A., ii, 720.
- Elliot, Felix A.** See also *Samuel Edward Sheppard*.
- Ellis, C. D.,** magnetic spectrum of the β -rays excited by γ -rays, A., ii, 422.
- Essey, Howard McKee,** conductivity and viscosity of solutions in dimethylamine, trimethylamine, ethylamine, diethylamine, triethylamine, and propylamine, A., ii, 79.
- Emden, Gustav,** a gravimetric method of estimation of small amounts of phosphoric acid, A., ii, 462.
- Emden, Gustav, and Erich Adler,** distribution of phosphoric acid in the white and red musculature of the rabbit, A., i, 529.
- Emden, Gustav, and Edward Grafe,** influence of muscular work upon excretion of phosphoric acid, A., i, 529.
- Emden, Gustav, Edward Grafe, and Ernst Schmitz,** raising of the capacity for work by administration of phosphate, A., i, 529.
- Emden, Gustav, and Salo Isaac,** influence of phosphorus poisoning on the lactacidogen content of rabbit's muscle, A., i, 529.
- Emden, Gustav, and Fritz Laquer,** chemistry of lactacidogen. III., A., i, 528.
- Emden, Gustav, Ernst Schmitz, and Peter Meincke,** influence of muscular work on the lactacidogen content of striped muscle, A., i, 528.
- Emery, William O.,** estimation of salicylates and phenol, A., ii, 603.
- Emmert, Bruno, and Rudolf Buchert,** compounds of pyridine with the alkali metals. IV., A., i, 268.
- Emmert, Bruno, and Ernst Meyer,** action of γ -bromovaleric acid on amines, A., i, 268.
- Emslender, R.** See *Alexander Guthrie*.
- Endler, Gertrud.** See *Alfred Eckert*.
- Engel, Erwin.** See *Hartwig Franzen*.
- Engelhard, R.,** carnitine, A., i, 830.
- Engelhardt, Wilhelm.** See *Wilhelm Stepp*.
- Engelmann, W.,** mechanism of action of Becquerel rays on the function of cells, A., i, 526.
- Engelson, Hugo,** the estimation of very small quantities of arsenic in urine, blood, and other body fluids, and the arsenic balance in the silver salvarsan treatment, A., ii, 59.
- Engfeldt, N. O.,** the oxidation of acetoacetic acid, A., i, 158.
- Englert, F.** See *Alfred Heiduschka*.
- Ephraim, Fritz,** complex compounds of thiocyanates and arsenious acid, A., i, 15.
- solubility. IV. Amines of salts of picric acid and of *p*-dichlorobenzene-sulphonic acid, A., i, 339.
- solubility. V. Solubility of salts of aromatic acids and their amines, A., i, 503.
- solubility. I., A., ii, 305.
- Ephraim, Fritz, and Edward Michel,** metallic hydrides. I. Alkali hydrides, A., ii, 638.
- Ephraim, Fritz, and Paul Mosimann,** solubility. II. Polyiodides of amines, A., ii, 338.
- solubility. III. Compounds derived from amines and bismuth or mercury iodides, A., ii, 339.

- Ephraim, Fritz**, and **Franz Müller**, the nature of subsidiary valencies. XXV. Stability of complex kations with varying magnitude of anions, A., ii, 455.
- Erdmann, W.** See **Th. Sabalitschka**.
- Erlieh, Joseph**, new physico-chemical law; the law of variability, A., ii, 580.
- Ernst (Frl.) Ilse**. See **Erich Müller**.
- Ero**. See **Paul Pascal**.
- Eschbaum, Friedrich**, new stalagmometer or guttometer, A., ii, 439.
- Ettisch, Margarete**. See **Fritz Uilmann**.
- Euler (Mme.), Astrid Cleve von**, condensations between carbonyl compounds and resorcinol (or orcinol) or phloroglucinol, A., i, 563.
the constitution of cellulose and cellobiose, A., i, 769.
relation to lignin of crude resin and tannic acid in spruce needles, A., i, 849.
- Euler, Hans von**, enzyme formation by *Penicillium glaucum*, A., i, 482.
- Euler, Hans von**, and **Arvid Hj. Hodelius**, calculation of the diffusion constant of dissolved substances, A., ii, 170.
adsorption by powdered metals. I., A., ii, 490.
- Euler, Hans von**, and **S. Heintze**, the susceptibility of the fermentation of a top yeast to the hydrogen-ion concentration, A., i, 149.
- Euler, Hans von**, and **Ingevar Laurin**, adaptation of a yeast to galactose, A., i, 642.
measurements of the maximal stability of organic compounds. I., A., ii, 498.
- Euler, Hans von**, **Ingevar Laurin**, and **A. Pettersson**, the adaptation of a top yeast to a galactose fermentation medium, A., i, 386.
- Euler, Hans von**, and **Olof Svanberg**, toxic actions in enzymic processes. II. The inactivation of saccharase (invertase) by organic substances, A., i, 68.
toxic actions in enzymic processes. IV. Electromotive measurements of the combination of silver and copper with saccharase and other organic compounds, A., i, 202.
preparation of highly active saccharase (invertase) preparations. V. Phosphorus content of purified saccharase solutions after exhaustive dialysis, and the micro-estimation of phosphorus, A., i, 522.
characterisation of amylase solutions, A., ii, 528.
- Euler, Hans von**. See also **Olof Svanberg**.
- Evans, Bernard Scott**, estimation of small quantities of chromium in steels, A., ii, 279, 562.
- Evans, Charles Lovatt**, the regulation of the reaction of the blood, A., i, 904.
a probable error in estimations by means of the hydrogen electrode, A., ii, 271.
- Evans, Charles Lovatt**. See also **Henry Hallett Dale** and **Harold Ward Dudley**.
- Evans, E.** See **John Cunningham McLennan**.
- Everest, Arthur Ernest**, and **Archibald John Hall**, anthocyanins and anthocyanidins. IV. Observations on (a) anthocyanin colours in flowers, and (b) the formation of anthocyanins in plants, A., i, 485.
- Evers, Fritz**. See **Carl Dietrich Harries**.
- Evers, Norman**, titration of certain alkaloids, A., ii, 527.
colorimetric method of estimating hydrogen-ion concentration. Some applications in the analytical laboratory, A., ii, 705.
- Ewan, Thomas**, and **John H. Young**, preparation of guanidine salts and of nitroguanidine, A., i, 500.
- Ewbank, (Miss) Elinor Katharine**. See **Nezil Vincent Sidgwick**.
- Ewing, Clare Olin**. See **Arno V. hoever**.
- Ewing, (Sir) J. Alfred**, molecular energy in gases, A., ii, 299.
- Ewing, Warren W.** See **William Draper Harkins**.

F.

- Faber, Alfred**. See **Ernst Hermann Riessenfeld**.
- Fabriques de Produits Chimiques de Thann et de Mulhouse**, preparation of borneol, A., i, 425.
- Färber, E., F. F. Nord**, and **Carl Neuberg**, phytochemical reduction of acetol with the production of optically active propylene glycol; presence and utilisation of racemic substances in the animal and plant organisms, A., i, 150.
- Fahriön, Wilhelm**, colophenic acid, A., i, 792.
- Fallebin, M.**, some minimum boiling point mixtures, A., i, 494.
- Fairbourne, Arthur**, the α -dimethyl-anthraquinones and their derivatives, T., 1573.

- Fairbourne, Arthur, and Harold Toms, α -monosodium glyceroxide; its structure and application, T., 1035.
a new synthesis of oxazines, T., 2076.
- Fairchild, John G., analysis of mineral sulphide water, A., ii, 126.
- Fajans, Kasimir, and K. von Beckerath, surface forces with hetero-polar crystal lattices; adsorption of lead isotopes by colloidal silver haloids, A., ii, 386.
- Fajans, Kasimir, and H. Grimm, the molecular volumes of the alkali haloids, A., ii, 168.
- Fajans, Kasimir, and Karl F. Herzfeld, size of the ions and lattice energy of the alkali haloids, A., ii, 174.
- Falch, Max, preparation of maltose, A., i, 161.
- Falcicola, Pietro, sensitive reaction for copper, A., ii, 711.
- Falcke, Victor, the reaction between ferrous oxide and carbon and between carbon monoxide and iron. IV., A., ii, 511.
- Falco, Ferdinand. See Alexander Gauthier.
- Fales, Harold A., and William A. Mudge, saturated potassium chloride calomel cell, A., ii, 79.
- Falk, Kaufman George. See Herbert Eckweiler.
- Falkov, M. See George W. Raiziss.
- Falta, W., and M. Richter-Quittner, the chemical composition of blood corpuscles, A., i, 285.
fibrin clotting. II. The combined chlorine in the blood, A., i, 330.
the so-called oligodynamic action of the heavy metals and of the salts of the heavy metals, A., ii, 335.
- Farbenfabriken vorm. Friedrich Bayer & Co., preparation of alkylimino-disulphonic acids, A., i, 316.
preparation of levulose-monophosphoric acid, A., i, 498.
preparation of *ar*- α -tetrahydronaphthalenecarboxylic acid, A., i, 567.
preparation of nitro-derivatives of *B*-azides of the anthraquinone series, A., i, 747.
- Farwerke vorm. Meister, Lucius, & Brüning, manufacture of pyridine bases, A., i, 52, 354.
improved manufacture of methane, A., i, 297.
preparation of aurothiosalicylic [*o*-aurothiolbenzoic] acid, A., i, 510.
preparation of arsenic compounds of the pyrazolone series, A., i, 752.
- Fargher, Robert George, arylazoglyoxalincarboxylic acids, T., 158.
- Fargher, Robert George, and Harold King, additive compounds of anti-pyrflaminodiacetic acid and its salts with neutral salts, T., 292.
- Fargher, Robert George, and William Henry Perkin, jun., *m*-opionic acid (4:5 dimethoxy-*o*-aldehydobenzoic acid), T., 1724.
- Fargher, Robert George, and Frank Lee Pyman, 4:8-methylaminoethylglyoxaline, T., 734.
- Farmer, Ernest Harold, and Christopher Kelt Ingold, the conditions underlying the formation of unsaturated and cyclic compounds from halogenated open-chain derivatives. III. Products derived from halogenated glutamic acids, T., 2001.
- Fauré-Fremiet, E., J. Dragoin, and (Mlle.) du Vivier de Streel, a microchemical reaction of pulmonary epithelial tissue, A., ii, 228.
- Fauré-Fremiet, E. See also (Mme.) Z. Gruzewska.
- Fawsitt, Charles Edward, and Christian H. Fischer, the miscibility of liquids, A., ii, 307.
- Fazi, Remondé, new reaction of aldehydes. II., A., i, 568.
colour reaction of indones, A., ii, 357.
- Fehrlé, Karl, a new periodic relationship between the atomic weights of the chemical elements. V. Calculation of Rydberg's constant, A., ii, 188.
- Feigl, Friedrich, and Rosa Stern, use of spot reactions in qualitative analysis, A., ii, 278.
- Feigl, Johann, presence of phosphates in human blood. XI. Hyperphosphatemia and "salt retention" in *Morbus brightii*, A., i, 73.
presence of phosphates in human blood. XII. The phosphorus distribution according to the known methods of separation and isolation, A., i, 143.
observations on the question of the residual reduction of the blood, A., i, 143.
cholesterolaemia. I. Comparative investigations of [analytical] methods with particular reference to colorimetric processes, A., ii, 220.
non-protein nitrogen of human blood. II. [The satisfactory estimation of the urea fraction], A., ii, 359.
- Feilberg, Niels. See Harold R. Christensen.
- Feist, Karl, and Richard Schön, the tannin of oak bark, A., i, 117.
- Feld, Hans. See Ernst Hermann Riesenfeld.

- Felix, B. B. C.** See *Jacob Böeseken*.
- Felix, Walter.** See *Kurt Heinrich Meyer*.
- Fellenberg, Theodore von,** a volumetric method for estimating several sugars in the presence of each other, A., ii, 136.
- Felsner, H.** See *Harold Cornelius Bradley*.
- Felton, Lloyd D.,** colorimetric estimation of hydrogen-ion concentration of small amounts of fluid, A., ii, 409.
- Fenger, Frederic, and Mary Hull,** the effect of age on pancreatic enzymes, A., i, 527.
- Fenn, Wallace O.,** phagocytosis of solid particles. III. Carbon and quartz, A., i, 640.
- Ferla, J.** See *P. Karrer*.
- Fernández, Obdulio,** oxydases; the Bach-Chodat system, A., i, 485.
- Fetkenheuer, Bruno,** action of sodium amalgam on carbon tetrachloride, A., ii, 547.
- Feuillié, E.** See *Ch. Achard*.
- Feulgen, R.,** a complex nucleic acid, A., i, 76.
new methods for the preparation of nucleic acids, A., i, 136.
preparation of spongy platinum, A., ii, 266.
lecture experiment; reduction of oleic acid to stearic acid, A., ii, 448.
- Fichter, Fritz,** electrical conductivity of arsenic acids, A., i, 628.
- Field, Ada M.,** a method of purifying certain kinds of proteins, A., i, 366.
- Field, (Miss) Ellen,** mitragynine and mitravervine, two new alkaloids from species of *Mitragyna*, T., 887.
- Fielding, William R.,** polymerisation in the solid state; polymerisation amongst liquids, A., ii, 487.
- Fierz, Hans Edward, and Hans Britsch,** purpuric acids, A., i, 419.
- Fiera, Hans Edward, and Fritz Schmid,** exhaustive sulphuration of naphthalene, A., i, 409.
- Fiesel, Hermann,** experimental investigation of the point of inflammation and the velocity of reaction of a hydrogen oxygen mixture, A., ii, 317.
- Filippi, Eduardo,** "salbrantin"; intra-organic behaviour of halogenated aromatic compounds, A., i, 146.
- Finckh, E. R. O.,** can the chloridion of Ringer solution be replaced by other ions with the beating frog's heart? A., i, 830.
- Findlay, Alexander, and William Thomas,** influence of colloids on the rate of reactions involving gases. I. Decomposition of hydroxylamine in the presence of colloidal platinum, T., 170.
- Findlay, George Marshall,** glyoxalase in avian beriberi, A., i, 478.
- Finkelstein, J. L.** See *R. M. Wilhelm*.
- Finndorf, Friedrich.** See *Karl Kindler*.
- Firth, James Brierley,** some factors governing the sorptive capacity of charcoal; sorption of ammonia by cocoa-nut charcoal, T., 926.
the sorption of hydrogen by amorphous palladium, T., 1120.
sorption of iodine by carbon, A., ii, 382.
- Firth, James Brierley.** See also *John Driver*.
- Fischer, Anna von,** investigation of the viscosity of cellulose acetates, A., i, 818.
- Fischer, Christian H.** See *Charles Edward Fawcitt*.
- Fischer, Emil,** allyl- β -glucoside, A., i, 10.
- Fischer, Emil, Max Bergmann, and Arthur Rabe,** acetobromochamine and its application in the synthesis of rhamnosides, A., i, 94.
- Fischer, Franz,** the preparation of artificial diamonds, A., ii, 111.
- Fischer, Franz, and Udo Ehrhardt,** thermal decomposition of phenoxides, A., i, 412.
- Fischer, Franz, and Georg Pfeiderer,** thermo-elements. II. The thermoelectric power of antimony-cadmium alloys of about 50 atomic per cent, A., ii, 296.
- Fischer, Franz, and H. Schröder,** the formation and chemical structure of coal, A., ii, 210.
- Fischer, Hermann O. L.** [with *Georg Anger, Heinrich Baerwind, and Heinrich Ohlendorf*], new derivatives of quinic acid, A., i, 419.
- Fischer, Otto, A. Bailing, and E. Aldinger,** action of furfuraldehyde on primary aniline bases and aromatic amino-acids, A., i, 22.
- Fischer, Otto, Curt Dietrich, and Friedrich Weiss,** formation of naphthiminazoles from 1-nitroso-2-alkylnaphthylamines, A., i, 57.
- Fischer, Otto, and Ludwig Grail,** "furo green," A., i, 42.
- Fischer, Otto, and Gander Scheib,** quinoxyanines. II, A., i, 56.

- Fischer, Otto, Günter Scheibe, Paula Merkel, and R. Müller**, 2:4-dimethylquinoline, 4-phenyl-2-methylquinoline, and 2:4:6-trimethylquinoline, A., i, 55.
- Fischer, Robert**, viscosimeter, A., ii, 382.
- Fisher, E. A.**, soil reaction. I. A résumé, A., i, 215.
soil reaction. II. The colorimetric determination of the hydrogen-ion concentration in soils and aqueous soil extracts, A., ii, 349.
- Fisher, Harry Linn, and Harold Lester Simons**, methyl tartrate, A., i, 303.
- Fishman, Jacob B.**, the condensation of formaldehyde with *o*-nitrophenol, A., i, 23.
some derivatives of 3-nitro-4-hydroxybenzyl alcohol, A., i, 23.
- Fiske, Cyrus H.**, estimation of inorganic phosphate in urine by alkalimetric titration, A., ii, 411.
estimation of inorganic sulphate, total sulphate, and total sulphur in urine by the benzidine method, A., ii, 558.
- Fittipaldi, Emil Hugo**, a new rapid method for detecting albumoses and peptones in urine, A., ii, 419.
- Flade, Friedrich, H. Scherffig, and Eugen Deiss**, ultramicroscopic investigation of manganous arsenate jellies, A., ii, 510.
- Fleck, Alexander**. See *Thomas Wallace*.
- leischer, Karl**, estimation of fermentation glycerol, A., ii, 714.
- leischer, Karl** [with *Walter Wolfgang Melber, and Johann Stemmer*], synthesis of indanediones. VII., A., i, 251.
- leischer, Karl, and Fritz Siefert**, synthesis of indanediones. IX. Action of substituted malonyl chlorides on partly hydrated aromatic hydrocarbons, A., i, 254.
- leischer, Karl, and Johann Stemmer**, synthesis of indanediones. VIII. Indanedione derivatives of thianthren, A., i, 264.
- leischer, Alexander, and Francis J. Clemenger**, simple method for the automatic registration of production of gas by bacteria in cultures and of the absorption of oxygen by aerobic bacteria which do not form gas, A., i, 207.
- Fletcher, (Sir) Lazarus**, obituary notice of, T., 547.
- Fletcher, (Sir) Lazarus** [with *George Tharland Prior*], meteoric stone of Cranlin, Co. Antrim, A., ii, 408.
- Fleury**. See *Marcel Delépine*.
- Fleury, Paul**, the catalytic decomposition of an alkaline solution of sodium hypobromite by copper sulphate; antagonistic action of iodine, A., ii, 70.
- Flink, Gust.**, trigonite and dixenite, two new minerals from Långban, Sweden, A., ii, 268.
- Flintzer, S.** See *H. Strohmman*.
- Florence, Gabriel**. See *Louis Hugouneq*.
- Florentin, Daniel**, estimation of phosphates in waters, A., ii, 707.
- Florentin, Daniel, and Henri Vandenberghe**, criticism of the methods of estimating small amounts of carbon monoxide in air and in flue gases, A., i, 276.
- Florentin, Daniel**. See also *André Kling*.
- Flürscheim, Bernhard Jacques**, some properties of tetranitroaniline (TNA), A., i, 504.
- Flury, Ferdinand**. See *Alexander Gutbier*.
- Fodor, Andor**, colloidal condition of the proteins in yeast extracts. I. Yeast extract proteins in alkaline solution; relationship to biological processes, A., i, 81.
colloid chemical basis of the kinetics of fermentation, A., ii, 27.
colloidal condition of the proteins in yeast extract. II. Yeast phosphorus proteins in the sol condition as colloid ferments, A., i, 701.
- Fodor, Andor**. See also *Emil Abderhalden*.
- Foerster, Fritz**, sodium perborate, A., ii, 506.
- Foerster, Fritz, and D. Aanensen**, electro-analytical separation of copper, antimony, and tin, A., ii, 350.
- Försterling, K.**, Bohr's atomic model and the theory of relativity, A., ii, 189.
- Fonda, Gordon R.** See *Arthur Beckett Lamb*.
- Fontés, G., and L. Thivolle**, micro-estimation of dextrose by means of potassium permanganate; application to blood and cerebro-spinal fluid, A., ii, 563.
- Foot, Harry Ward**, equilibrium in the system, ammonia-water-ammonium thiocyanate, A., ii, 441.

- Footo, Harry Ward, and Stuart R. Brinkley**, equilibrium in the system, ammonia-ammonium nitrate-ammonium thiocyanate, A., ii, 441. method of producing dry ammonia, A., ii, 448.
- Footo, Paul D.** See **F. L. Mohler**.
- Footitt, Frank F.** See **Edward Wight Washburn**.
- Forcrand, Robert de**, the melting point of heptane and the law of alternance of melting points, A., ii, 85.
- Formhals, R.**, new titrimetric estimation of hyposulphite, A., ii, 58.
- Fornasir, Virgilio.** See **Leopold Ruzicka**.
- Forsén, L.**, system and constitution of derivatives of molybdic acid. I. and II., A., ii, 265, 265.
- system and constitution of complex derivatives of the molybdic acids, A., ii, 340.
- Forster, Martin Onslow, and William Bristol Saville**, studies in the camphane series. XXXIX. *p*-Aminophenylaminocampher (camphoryl-*p*-phenylenediamine), T., 789.
- Foshag, William F.**, plazolite, a new mineral, A., ii, 270.
- Foshag, William F.** See also **Edgar Theodore Wherry**.
- Fosse, Robert**, synthesis of cyanic acid by oxidation of formamide and oxamic acid, A., i, 165.
- synthesis of cyanic acid by oxidation of organic substances; new methods of detecting the substance, A., i, 321.
- Fosse, Robert, and G. Laude**, synthesis of cyanic acid and carbamide by oxidation in ammoniacal solution of alcohols, phenols, and aldehydes, A., i, 321.
- syntheses of cyanic acid and carbamide by oxidation of ketones, acids, and amines in presence of ammonia, A., i, 500.
- syntheses of cyanic acid and of carbamide by oxidation of organic substances: amides, nitriles, and methylcarbamylamine, A., i, 652.
- Fosse, Robert, and (Mlle.) N. Rouchel-man**, the formation of carbamide in the liver after death, A., i, 382.
- Foster, Dorothy Lillian, and Dorothy Mary Moyle**, effect of exposure to low temperatures on some physiological, chemical, and physical properties of amphibian muscle, A., ii, 637.
- Fouque, Gaston**, dicyclohexylamine and cyclohexylaniline, A., i, 555.
- Fournau, Ernest**, local anaesthetics, A., i, 548.
- Fournau, Ernest, and E. Donard**, iodine monochloride, A., ii, 581.
- Fournau, Ernest, and A. González**, separation of β -aminoethyl alcohol from mixtures containing choline, A., i, 546.
- Fournau, Ernest, (Mlle.) Montagne, and José Puyal**, hypnotics. II. Derivatives of cyclohexanecarboxylic acid, A., i, 566.
- Fournier, Louis, and J. Guénot**, treatment of syphilis by bismuth, A., i, 908.
- Fowler, Gilbert John, Jol D. Esal Behram, S. N. Bhat, K. Habib Hassan, S. Mahdihassan, and N. N. Inuganti**, bio-chemistry of the mahua flower, A., i, 152.
- Fox, Francis William.** See **John Addyman Gardner**.
- Fox, John Jacob.** See **(Sir) James Johnston Dobbie**.
- Fränkel, Sigmund, and Gino Meldolesi**, the relation of pressure and temperature to enzyme action; the influence of pressure on the velocity of pepsin, tryptic, and diastatic hydrolysis, A., i, 381.
- Fränkel, Sigmund, and Erik Schwarz**, the water-soluble vitamin and the substances accelerating fermentation. I. A method for the estimation and the preparation of a substance from yeast and rice polishings which accelerates fermentation, A., ii, 223.
- Fraenkel, Walter, and H. Honken**, diffusion velocity in solid gold-silver mixed crystals and the diffusion coefficient of gold in silver at 870°, A., ii, 491.
- Franchimont, Antoine Paul Nicholas, and Hilmar Johannes Baetz**, α -sulphopropionic acid and its acid salts, A., i, 9.
- the stereoisomeric components of α -sulphopropionic acid, A., i, 34.
- Franek, J., and P. Knipping**, potential of excitation of helium, A., ii, 150.
- Franco, C.** See **Umberto Sborgi**.
- François, Maurice, and Ch. Lormad**, an arrangement of a microscope for the examination of opaque crystals, A., ii, 493.
- method of photographing transparent crystals, A., ii, 626.
- Franzen, Hartwig**, chemical constituents of green plants. XII. Volatile constituents of oak leaves, A., i, 614.
- Franzen, Hartwig, and Erwin Engel**, influence of substituents on reactions. VI. Nitration of substituted acetanilides, A., i, 713.

- Franzen, Hartwig, and Fritz Helwert**, the method of Witt and Utermann for the separation of *o*- and *p*-nitroacetanilides, A., i, 714.
- Franzen, Hartwig, and Irene Rosenberg**, influence of substituents on reactions. I. Influence of chlorine and bromine on the velocity of interaction of benzyl chloride with sodium ethoxide, A., i, 233.
- Franzen, Hartwig, and Artur Schneider**, separation of aliphatic amines from one another and from ammonia, A., ii, 663.
- Franzen, Hartwig, and Paul Steinführer**, aminohydrazines. VI. Acetophenone-*p*-aminophenylhydrazone and *p*-amino-phenylhydrazine, A., i, 463.
- Franzen, Hartwig, Adolf Wagner, and Artur Schneider**, the chemical constituents of green plants. XIII. On the volatile basic substances of green plants, A., i, 838.
- Fraser, Chas. G.**, the action of methylene-blue and certain other dyes on living and dead yeast, A., i, 293.
- methylene-blue as indicator in determining the toxicity of phenol and phenol-salt solutions towards yeast, A., i, 293.
- Fayer, Joseph Christie Whitney**. See **Benjamin Franklin Lovelace**.
- Fed, Edwin Brown, and Audrey Davenport**, the effect of organic nitrogenous compounds on the nitrate-forming organism, A., i, 532.
- Fed, Edwin Brown**. See also **C. F. Arzberger, and W. H. Peterson**.
- Fed, E. Stanley**. See **Charles L. Burdick**.
- Fesman, Benjamin**. See **Howard Waters Doughty**.
- Felse, R.**, the behaviour of some pyrimidine derivatives containing sulphur in the animal organism, A., i, 207.
- Feitag, Karl**. See **Fritz Mayer**.
- Féjaques, M.** See **Camille Matignon**.
- Fellstedt, K.** See **Karl Fries**.
- Fellstedt, R.** See **Karl Fries**.
- Fench, H. E., and Roger Adams**, the reaction between acid haloids and aldehydes. II., A., i, 342.
- Finkel, carbon dioxide as a fertiliser**, A., i, 703.
- Fise, Wilhelm**, passivity and photoelectricity, A., ii, 569.
- Fisenius, Ludwig**. See **Otto Lemmermann**.
- Fisenius, Wilhelm, and Leo Grünhut**, estimation of sugar in wine, A., ii, 121.
- Fresenius, Wilhelm, and Leo Grünhut**, detection and estimation of salicylic acid in wine, A., ii, 602.
- Freudentberg, Ernst, and Paul György**, the fixation of calcium by animal tissues. II., A., i, 382.
- Freudentberg, Karl**, cellulose, A., i, 400.
- catechin, A., i, 577.
- Freudentberg, Karl, Otto Böhme, and Alfred Beckendorf**, tannins and similar substances. VII. Stereoisomeric catechins, A., i, 576.
- Freudentberg, Karl, and Hans Walpnski**, tannins and similar substances. VIII. The tannin of the edible chestnut, A., i, 799.
- Freund, Elsc.** See **Edmund Speyer**.
- Freund, Helmut.** See **Edmund Speyer**.
- Freund, Julius**, estimation of carbon dioxide in air, A., ii, 348.
- Freund, Liselotte**. See **Edmund Speyer**.
- Freund, Martin, and Edmund Speyer** [with **Ernst Guttmann**], the reduction products of thebaine, A., i, 125.
- Freund, Walter**. See **Edmund Speyer**.
- Freundlich, Herbert, and Alexander Nathansohn**, photo-sensitiveness of arsenic trisulphide sols, A., ii, 494.
- chemical reactions in mixtures of sols, A., ii, 536.
- Frey, L.** See **S. Kostychev**.
- Freyer, Wilhelm**. See **Karl Andreas Hofmann**.
- Fric, R.**, the stability of powders containing cellulose nitrates, A., i, 650.
- Fricke, Hugo**, the *K*-characteristic absorption frequencies for the chemical elements magnesium to chromium. A., ii, 6.
- Fricke, Hugo, and Theodore Lyman**, spectrum of helium in the extreme ultra-violet, A., ii, 362.
- Fricke, Hugo**. See also **William Duane**.
- Fricke, K.**, solidifying rate of paraffins, A., ii, 659.
- Fricke, Robert**, thermo-kinetic explanation for the reciprocal attraction of colloidal particles (a possibility of explaining gravitation), A., ii, 387.
- Friedrich, Walter**, preparation of trinitroresorcinol, A., i, 505.
- Friedländer, Paul**, the reaction of naphthols and naphthylamines with bisulphite, A., i, 443.
- Friedrich, Alfred**. See **Alois Zinke**.
- Friedrichs, Fritz**, melting point apparatus, A., ii, 258.
- ammoniates as binary systems. I., A., ii, 503.

- Friedr., John Albert Newton**, a colloid theory of the corrosion and passivity of iron, and of the oxidation of ferrous salts, T., 932.
- electrochemical conceptions of valency, T., 1040.
- Fielding's formula connecting critical temperatures and pressures, A., ii, 678.
- Fries, Karl** [with K. Frellstedt], acetylnaphthols [hydroxynaphthyl methyl ketones], A., i, 423.
- Fries, Karl**, and R. Frellstedt, benzocoumaranones [naphthasuranones], A., i, 431.
- Fries, Karl**, and W. Hartmann, degradation reactions in the anthraquinone series, A., i, 256.
- Fritsch, Albert**. See **Albin Kurtenacker**.
- Fritsch, Julius**. See **Robert Kremann**.
- Fritsch, Rodolfo**, is selenium present in the animal and the plant organisms? A., i, 206.
- Fritz, Felix**, spontaneous decomposition of linocyn, A., i, 303.
- Fröboese, Victor**, volumetric estimation of sulphurous acid in organic substances by distillation, A., ii, 592.
- Frölicher, Victor**, and **Julius Berend Cohen**, the nitro- and amino-derivatives of *m*-hydroxybenzoic acid, T., 1425.
- Froidevaux, J.**, and **Henri Vandenberghe**, estimation of ammoniacal nitrogen in fertilisers containing calcium cyanamide and ammonium salts, A., ii, 462.
- Fromm, Emil**, and **Alfred Ehrhardt**, stereoisomeric derivatives of phenacyl sulphide, A., i, 275.
- Fromm, Emil**, and **Richard Klein**, the cilianols, A., i, 797.
- Fromm, Emil**, and **Adolf Kohn**, derivatives containing sulphur prepared from ethylene chlorohydrin, A., i, 242.
- Frühling, Adelheid**. See **Karl von Auwers**.
- Frumkin, A.** See **Volkmar Kohlschütter**.
- Fry, William H.** See **Charles J. Moore**.
- Fryer, Percival John**, time factor in saponification, A., ii, 319.
- Fuchs, Walter**, tautomerism of phenols. III. Sodium hydrogen sulphite and phloroglucinol, A., i, 241.
- tautomerism of phenols. IV., A., i, 241.
- lignin and the sulphite boiling process, A., i, 309.
- Fühner, Hermann**, narcotic action of light petroleum (pentane, hexane, heptane, octane), A., i, 478.
- Fürth, Otto von**, and **Erlic Lieben**, colorimetric investigation of tryptophan. III. The cleavage of tryptophan during hydrolysis of proteins, A., i, 64.
- colorimetric experiments on tryptophan. IV. Formation of melanoidin by the acid hydrolysis of protein and its dependence on tryptophan complexes, A., i, 820.
- colorimetric experiments on tryptophan. V. The proteins of immune sera and their tryptophan content, A., i, 825.
- colorimetric investigation of tryptophan. II. Systematic investigation of the colorimetric estimation of tryptophan based on Voisin's reaction; the application of this method to proteins and organs, A., ii, 71.
- Fürth, Otto von**, and **Edmund Nobel**, colorimetric investigations of tryptophan. I. The tryptophan content of blood serum and milk, A., i, 74.
- Fürth, Reinhold**, colour and Brownian movement of ultra-microscopic metallic particles, A., ii, 243.
- Fujimori, Y.** See **L. Launoy**.
- Fujita, Atsushi**, ψ -tetrahydroanemomic acid, A., i, 792.
- Fujita, Atsushi**. See also **Yasuhiko Asahina**.
- Fukuda, Mitsuharu**. See **Bunsaku Arakatsu** and **Masamichi Kimura**.
- Fukuzawa, Akira**. See **Sojiro Kawa**.
- Fuller, A. V.**, new apparatus for quantitative sublimation, A., ii, 222.
- Fulmer, Ellis I.**, effect of alcohol on the toxicity of phenol towards yeast, A., i, 293.
- acclimatisation of yeast to ammonium fluoride and its reversion in water, A., i, 910.
- Fulmer, Ellis I.**, **Victor E. Nelson**, and **Frank F. Sherwood**, the nutritional requirements of yeast. I. The role of vitamins in the growth of yeast, A., i, 292.
- the nutritional requirements of yeast. II. The effect of the composition of the medium on the growth of yeast, A., i, 292.
- Fulmer, Ellis I.** See also **Victor E. Nelson**.
- Funcke, Yngve**, Brodie's hydrocarbon, melene, $C_{20}H_{40}$, A., i, 533.
- estimation of urea, A., ii, 468.

- Fuscoke, S.**, distribution of sodium salts in plant and animal cells, A., i, 907.
Funk, Casimir, and **Harry E. Dublin**, a test for anti-beri-beri vitamin and its practical application, A., ii, 72.
Furukawa, Seiji, chemical constitution and taste of aldehydes, ketones, etc., A., i, 637.

G.

- Gabriel, Siegmund**, primary quaternary bases, A., i, 58.
Gabriel, Siegmund, and **Wilib. Gerhard**, derivatives of certain *o*-nitroketones. I. and II., A., i, 441, 687.
Gadamer, Johannes, and **Fritz Hammer**, scopoline, A., i, 588.
Gadamer, Johannes, and **Frieda Knoch**, the action of ethyl chloroformate on tertiary cyclic amines [alkaloids], A., i, 579.
Gad-Andresen, Knud L., the distribution of urea in the organism, A., i, 832.
Galatis, Lucas, some derivatives of *p*-hydroxyphenylglycine, A., i, 556.
Galavielle, Portes, and **Cristol**, generalisation of Salkowski's, Liebermann's, and Schiff's reactions [for cholesterol], A., ii, 525.
Galizzi, A. See **Riccardo Ciusa**.
Gallagher, Patrick, phototropy, A., i, 715.
Gamble, C. A. See **Charles A. Browne**.
Ganassini, Domenico, chemico-toxicological detection of morphine, A., ii, 471.
Gannage, E. See **Marc Tiffeneau**.
Garban, H. See **Marcel Brulé**.
Garcia, Eduardo D., analysis of fluorides, A., ii, 345.
 estimation of phosphorus in copper phosphide, A., ii, 346.
 the estimation of silicon in cast iron, A., ii, 348.
 assay of fluorides; modification of Starck and Thorin's method, A., ii, 411.
Garcia, Eduardo D. See also **Victor Arreguine**.
Garcia, Maria L. Luce de, additive properties of salts of organic acids, A., ii, 361.
Gardner, John Addyman, composition of the unsaponifiable matter of the ether extract of human faeces, A., i, 689.
Gardner, John Addyman, and **Francis William Fox**, source of error in the colorimetric methods for the estimation of cholesterol in tissue fats, A., ii, 563.
Gardner, John Addyman, and **May Williams**, methods of estimating cholesterol and allied substances, A., ii, 563.
Garner, William Edward, and **C. L. Abernethy**, heats of combustion and formation of nitro-compounds. I. Benzene, toluene, phenol, and methyl-aniline series, A., ii, 435.
Garner, William Edward, and **Douglas Norman Jackman**, catalysis of the mutarotation of dextrose by metals, T., 1936.
Garner, William Edward, and **James Irvine Orne Masson**, the activity of water in sucrose solutions, A., ii, 250.
Garner, William Edward, and **Kichimatsu Matsuno**, the explosion of acetylene and nitrogen, T., 1903.
Garnier, M. See **Paul Pascal**.
Garrison, Allen. See **Harry B. Weiser**.
Gartner, Erich, weighing of the precipitation vessel with the precipitate in quantitative micro-analyses; two methods based on this principle, A., ii, 123.
Gascard, Albert, the higher terms of the saturated fatty series, A., i, 536.
Gassmann, Theodor, the detection of selenium in the human, animal, and plant organisms, A., i, 78.
Gastaldi, Carlo, pyrazines, A., i, 602.
Gattermann, Ludwig, and **Hans Rolles**, azides, anthranils, and azo-derivatives of anthraquinone, A., i, 817.
Gaucher, Louis, and **Georges Rollin**, a new calcium salt, A., i, 220.
Gaule, Alice. See **Hermann Staudinger**.
Gault, Henri, and **R. Weick**, additional properties of the keto-enolic double linking, A., i, 674.
 the additive properties of the keto-enolic double linking, A., i, 728.
Gautier, Emile Justin Armand, obituary notice of, T., 537.
Gavron, Joseph L. See **George W. Raiziss**.
Gay, L., distillation, and rectification, A., ii, 85.
Geake, Arthur. See **Maximilian Nierenstein**.
Gehrcke, E., atomic nuclei, A., ii, 323.
 symmetrical coupled groups of lines in the iron spectrum, A., ii, 612.
Gehrcke, E., and **L. C. Glaser**, fine structure of band spectra, A., ii, 611.
Gehrcke, E., and **E. Lau**, Balmer series of hydrogen, A., ii, 565.
Geigel, Haribron. See **Hans von Halban**.
Geijer, Per, the cerium minerals of Bastnäs, Sweden, A., ii, 702.

- Geilmann, *W.*, micro-estimation of nitrogen in agricultural materials, A., ii, 128.
- Geisselbrecht, *G.* See *Walther Diltthey*.
- Gellendien, *Walter*. See *Bernhard Neumann*.
- Geloso, *Max*, the reduction of permanganate by arsenious acid, A., ii, 115.
- Genelin, *S.*, expulsion of a gas from its solution by changing its solvent, A., ii, 105.
- the preparation of nitrogen peroxide from air with the spark from a weak induction coil, A., ii, 105.
- General Electric Co., Ltd., London, Research Staff, disappearance of gas in the electric discharge. II. and III., A., ii, 369, 533.
- micro-analysis of gases by the use of the Pirani pressure gauge, A., ii, 591.
- Gennari, *M.* See *Ernesto Puxeddu*.
- George, *Herbert John*. See *David Leonard Chapman*.
- Georgievics, *Georg von*, adsorption and solubility, A., ii, 491.
- Gérard, *P.* See *P. Carnot*.
- Gerhard, *Wilh.* See *Siegfried Gabriel*.
- Gerhardt, *O.* See *Hermann Staudinger*.
- Gerhardt, *Otto*, hydrazones and azines. II. Condensation products of aromatic ketohydrazones with orthoquinones, A., i, 746.
- Gerlach, *W.* See *M. Born*.
- Germann, *Albert F. O.*, devitrification of glass; a surface phenomenon; repair of crystallised glass apparatus, A., ii, 262.
- Gerngross, *Otto*, benzoyl derivatives of histidine and histamine, A., i, 57.
- preparation of 5(4)-aryalkylaminoalkylglyoxalines of the general formula $C_6H_5N_2[CH_2]_xNH[CH_2]_y$ aryl, A., i, 454.
- Gerold, *Erich*, density, refractivity relationship and dispersion of gaseous nitrogen at its boiling point, A., ii, 585.
- Gersdorff, *C. E. F.* See *Carl Oscar Johns*.
- Gerth, *O.*, electromotive force of the iodine-silver element and the heat of formation of silver iodide, A., ii, 534.
- Getman, *Frederick Hutton*, absorption spectra of potassium ferro- and ferricyanides, A., ii, 287.
- Ghosh, *Brigendra Nath*. See *Ananda Kishore Das*.
- Gibson, *David Templeton*, and *Alexander Kilen Macbeth*, the action of alkyl nitrates on piperidine, T., 438.
- Gibson, *George E.*, and *William Albert Noyes*, obliteration of the characteristic spectra of metals by certain gases, A., ii, 610.
- Gibson, *I. A.* See *John A. Wilkinson*.
- Gibson, *William Howieson*. See *Oscar Lisle Brady*.
- Giemsa, *G.*, and *Josef Halberkann*, cinchona alkaloids. IV. Transformations of the diazonium compounds of 5-aminocupreine and 5-aminohydrocupreine and their methyl and ethyl ethers; formation of diazoanhydrides and of cuprean and hydrocuprean and their ethers; β -ethylcupreine, A., i, 581.
- cinchona alkaloids. V. Stereoisomeric compounds of hydrocuprean, A., i, 583.
- Gillet, *Alf.*, shifting of the ethylenic bond in presence of acid catalysts, A., i, 490.
- molecular rearrangement of unsaturated compounds in acid solution, A., i, 533, 761.
- Gillet, *Camille*. See *H. Buttgenbach*.
- Gillis, *Clara L.* See *Richard F. Jackson*.
- Gillis, *J.*, solubility of lactose, A., i, 11.
- Gilmour, *George van Barneveld*, reactions of sugars and polyatomic alcohols in boric acid and borate solutions, with some analytical applications, A., ii, 221.
- Girswald, *Conroy von*, and *Hans Siegens*, action of hydrogen peroxide on hexamethylenetetramine, A., i, 316.
- new nitrogenous peroxide compounds from formaldehyde, A., i, 356.
- Giua, *Mario*. See *Michele Giua*.
- Giua, *Michele*, aromatic nitro-derivatives. XII. Action of *as*-phenylmethylhydrazine on β - and γ -trinitrotoluenes, A., i, 198.
- aromatic nitro-derivatives. XIV. A new bromotrinitrobenzene, A., i, 551.
- nitration of toluene, A., i, 712.
- Giua, *Michele*, and *A. Angeletti*, aromatic nitro-derivatives. XIII. Substitution in the benzene nucleus, A., i, 556.
- Giua, *Michele*, and *E. Baglioli*, unsaturated compounds. III. Condensation of *p*-aminoacetophenone and acetyl-*p*-aminoacetophenone with aromatic aldehydes, A., i, 730.
- Giua, *Michele*, and *Mario Giua*, molecular organic compounds. VI. Additive compounds of *s*-trinitroanisole and trinitro-*m*-cresol methyl ether with certain tertiary bases, A., i, 552.

- Giua, Michele, and Mario Giua**, aromatic nitro-derivatives. XV. Substitution in the benzene nucleus, A., i, 858.
- Giua, Michele, A. Maresellino, and A. Curti**, additive compounds and the process of substitution in the benzene ring. V. Organic molecular compounds, A., i, 193.
- Givaudan & Co., L.**, constitution of the peppermint ketone of eucalyptus oils, A., i, 793.
- Glaser, L. C.** See *E. Gehrcke*.
- Glasstone, Samuel**, physical chemistry of the oxides of lead. I. The solubility of lead monoxide, T., 1689. physical chemistry of the oxides of lead. II. The supposed enantiomorphism of lead monoxide, T., 1914. the direct iodometric estimation of lead peroxide, T., 1997.
- Glattfeld, John W. E., and George E. Miller**, the C_4 -saccharinic acids. I. The resolution of *dl*-8γ-dihydroxybutyric acid into the optically active components; the derivatives of these acids, A., i, 7.
- Glattfeld, John W. E., and C. H. Milligan**, the preparation of optically active hydrazines. I. The preparation of *dl*- p - α -dimethylpropylphenylhydrazine; the isolation of pure *d*- p - α -dimethylpropylaniline, A., i, 63.
- Glattfelder, A.** See *P. Karrer*.
- Glatzel, Emanuel**, a crystalline normal dolomite from the Kneifelspitze, Berchtesgaden, Bavaria, A., ii, 120.
- Glauser, Th. R.**, combustions with tellurium dioxide, A., ii, 416.
- Glaze, Francis W.**, estimation of small amounts of lead in brass, A., ii, 559.
- Glenn, M. L.** See *Esper S. Larsen*.
- Glocker, R., and M. Kaupp**, atomic structure and scattered radiation, A., ii, 323.
- Glocker, R.** See also *L. Baumeister*.
- Glover, Thomas.** See *Gilbert Thomas Morgan*.
- Glund, Wilhelm**, conversion of ammonium sulphide and of thiosulphates into sulphates, A., ii, 697.
- Gmachi-Pammer, Julius**, softening of carbon, A., ii, 111.
- Gmachi-Pammer, Julius.** See also *Robert Kremann*.
- Gmelin, H.** See *Georg Grube*.
- Gneda, Julius**, theory of valency. I. The behaviour of decolorised magenta solutions. II. The configuration of benzene and the organic hydroxyl group, A., ii, 394.
- Godchet, Marcel**, the catalytic hydrogenation of suberone, A., i, 114. some derivatives of thujamenthone, A., i, 329.
- Goddard, Archibald Edwin**, organo-derivatives of thallium. I. Some reactions of thalliumdialkyl haloids, T., 672. metallic derivatives of nitrophenolic compounds. I. Interaction of barium, strontium, and calcium hydroxides with the mononitrophenols, T., 1161. organo-derivatives of thallium. II. Interaction of thalliumdialkyl hydroxides with nitrophenols and nitro-cresols, T., 1310.
- Goddard, Archibald Edwin.** See also (*Mrs.*) *Dorothy Goddard*.
- Goddard (Mrs.) Dorothy, and Archibald Edwin Goddard**, metallic derivatives of nitrophenolic compounds. II. Some nitrolyloxides of metals of Group II, T., 2044.
- Godon, F. de.** See *Alphonse Mailhe*.
- Goeb, Aug.** See *Julius Bredt*.
- Goebel, Alfred.** See *Hans Lecher*.
- Göhring, Rudolf.** See *Ernst Späth*.
- Goldberger, A. von.** See *Eugen Bamberger*.
- Goldschmidt, Heinrich, and Ashjörna Brannaas**, kinetics of the reduction of azo-compounds, A., ii, 184.
- Goldschmidt, Victor Moritz**, reaction between iron sulphide and carbon dioxide, A., ii, 553.
- Goldstein, Henri.** See *Friedrich Kehrmann* and *Hermann Staudinger*.
- Gonnermann, Max**, the biology of silicic acid, alumina, and iron, A., i, 79.
- González, A.** See *Ernest Fourneau*.
- Gonzalez, P.** See *Enrique Moles*.
- Goodson, John Augustus**, constituents of the bark of *Zanthoxylum macrophyllum*, Oliver, A., i, 488.
- Gordon, J. R.** See *C. W. Simmons*.
- Gorini, Constantino**, proteolytic activity of lactic organisms. V. Phenomena of sudden physiological mutation, A., i, 641.
- Grise, A., and Ch. Vischniac**, the alkaloids of valerian, A., i, 488.
- Gorter, K.**, turotetanine, the tetanising alkaloid of various *Lauraceae*, A., i, 557.
- Gortner, Ross Aiken.** See *J. Arthur Harris* and *George E. Holm*.
- Gossner, R.**, the chemical constitution of silicates, A., ii, 649.
- Gottlieb-Billroth, Haas.** See *Kurt Heinrich Meyer*.
- Gough, William Henry.** See *Stanley Francis Birch*.

- Gränacher, Ch.**, the oxidation of aliphatic hydrocarbons by nitrogen peroxide, A., i, 2.
- Grafe, Eduard.** See *Gustav Embden*.
- Grafton, E. H.** See *William Draper Harkins*.
- Graham, Hugh,** and *Alexander Killen Macbeth*, colorations produced by substituted nitroforms, T., 1362.
- Graham, V. A.** See *James B. Sumner*.
- Grahl, Ludwig.** See *Otto Fischer*.
- Gralka, Richard.** See *Hans Aron*.
- Gramont, (Comte) Arnaud de**, list of the most sensitive rays of the elements, suitable for use in their detection, A., ii, 73.
the quantitative sensitiveness of the spectra of silicon in molten salts and steels, A., ii, 474.
- Gramont, (Comte) Arnaud de,** and *Gustave Adolphe Hemsalech*, the rôle of electrical actions in the emission and appearance of certain types of rays in the spectrum of magnesium, A., ii, 611.
- Grandjean, Francis**, the existence of equidistant differentiated planes normal to the optic axis in anisotropic liquids (liquid crystals), A., ii, 91.
- Grandmougin, Eugène**, the dibromoanthraquinone used in the synthesis of alizarin, A., i, 871.
the constitution of the polysulphonated derivatives of indigotin, A., i, 889.
- Grant, E. H.**, reaction of sparteine, A., ii, 71.
- Grant, Reginald Lindsay,** and *Frank Lee Pyman*, the nitro- and amino-derivatives of 4-phenylglyoxaline, T., 1893.
- Gratia, André**, mechanism of anticoagulant actions [in blood clotting], A., i, 753.
- Graumann, Erich.** See *Erich Schmidt*.
- Gray, F. J.** See *Walter Hope MacIntire*.
- Gray, J.**, the relation of the animal cell to electrolytes, A., i, 145.
- Graziani, F.,** and *L. L'Esana*, comparison of the analytical methods used for alloys; estimation of manganese in cast-iron, A., ii, 464.
- Greaves, Joseph E.,** and *Yngve Lund*, the rôle of osmotic pressure in the toxicity of soluble salts, A., i, 758.
- Grebe, Leonhard,** and *Albert Bachem*, the Einstein gravitational displacement in the case of the nitrogen band $\lambda = 3883$ Å.U. in the sun's spectrum, A., ii, 143.
- Green, Arthur George.** See *British Dyestuffs Corporation, Ltd.*
- Green, Stanley Joseph,** and *Thomas Slater Price*, the chlorovinylchlorarsines, T., 448.
- Greenish, Henry G.,** and *Constance E. Pearson*, new source of santonin, A., i, 211.
- Grégoire, Ach.**, colorimetric estimation of phosphoric acid, A., ii, 462.
- Grégoire, Ach.,** and *Em. Carpioux*, estimation of chlorine, sulphur, and phosphorus in organic substances, A., ii, 461.
- Griebel, C.**, reaction for the microchemical detection of "chinosol" or 8-hydroxyquinoline salts, A., ii, 608.
- Griessbach, Robert**, precipitation equilibria, A., ii, 314.
- Griffin, Roger C.**, solubility of metals in acids containing formaldehyde, A., ii, 115.
- Griffith, Robert Owen,** and *William James Shutt*, the decomposition of ozone by light of the visible spectrum, T., 1943.
- Griffiths, Evan Dalton.** See *Fred Barrow*.
- Grigaut.** See *Chaufard*.
- Grignard, Victor,** and *P. Crouzier*, the preparation of cyanogen bromide and iodide, A., i, 404.
- Grignard, Victor, G. Rivat,** and *G. Scatchard*, 88'-di-iododiethyl sulphide and its application to the detection and estimation of yperite, A., ii, 282.
- Grimm, H.** See *Kasimir Fajans*.
- Grimme, Clemens**, analysis of shepherd's purse (*Capsella bursa pastoris*), A., ii, 720.
- Grimmer, Walther,** and *B. Wiemann*, microchemistry of micro-organisms. I. Biochemistry of *Bacillus mesentericus vulgatus*, A., i, 479.
- Grist, William Robinson.** See *Gilbert Thomas Morgan*.
- Grob, Walther.** See *Chemische Fabrik Rhenania Akt.-Ges.*
- Groll, J. Tenminck** [with *C. N. van der Meer*], influence of bile and bile salts on the most important digestive ferments, A., i, 205.
- Gross, E. G.,** and *H. Steenbock*, creatinuria. II. Arginine and cystine as precursors of creatine, A., i, 700.
creatinuria. III. The effect of thyroid feeding on creatinuria, A., i, 709.
- Gross, R. Eberhard**, course of the reaction of arginine, A., i, 522.
- Grotlich, V. E.,** and *W. C. Smith*, detection and estimation of coal-tar oils in turpentine, A., ii, 659.
- Grube, Georg,** and *H. Gmelin*, electrolytic formation of the alkali salts of ferrous and ferric oxides, A., ii, 49.

- Brün, *Adolf*, constitution of the resin acids of colophony, A., i, 344.
- Brün, *Adolf* [with *Josef Scholze* and *Franz Wittka*], alkyl interchange and its relationship to the constitution of fats, A., i, 222.
- Brün, *Adolf*, and *Th. Wirth*, oxidation of paraffin wax to true wax in ultra-violet light, A., i, 3.
- Brün, *Adolf*, and *Th. Wirth*, estimation of volatile alcohols, A., ii, 660.
- Brün, *Adolf*, and *Franz Wittka*, elucidation of the constitution of glycerides, A., i, 220.
- Grünhut, *Leo*, detection and estimation of levulinic acid in foods, A., ii, 602.
- Grünhut, *Leo*. See also *Wilhelm Fresenius*.
- Griss, *J.*, reagent for wood and vanillin, A., ii, 284.
- Grützer, *Rudolf*. See *Edward Strauss*.
- Gruijter, *G. J. de*. See *Andreas Smits*.
- Grazewska, (*Mme.*) *Z.*, the mucilaginous substances of *Laminaria flexilis*, A., i, 704.
- Grazewska, (*Mme.*) *Z.*, and *E. Fauré-Frémiet*, the localisation of glycogen in the liver and the muscles of dogs fed with a view to the maximum production of this reserve, A., i, 699.
- Gooden, *B.*, and *Robert Pohl*, photo-electric conductivity and phosphorescence, A., ii, 145.
- Gudnot, *L.* See *Louis Fournier*.
- Günther, *Paul*, specific heat at low temperatures, A., ii, 16.
- Günther, *S.* See *P. Karrer*.
- Günther-Schulze, *A.*, behaviour of electrolytic ions in solid substances. II. Dissociation relationships in permutite, A., ii, 9.
- some base equilibria in permutite, A., ii, 496.
- electromotive behaviour of aluminium, A., ii, 535.
- volume of kations in permutite, A., ii, 624.
- the function of water of crystallisation in the behaviour of permutite, A., ii, 642.
- Günzburg, *L.* See *Erich Adler*.
- Guertler, *William Minot*, and *Karl Leo Meissner*, the theory of smelting. II. Equilibria between pairs of metals and sulphur. I. The system, copper-lead-sulphur, A., ii, 402.
- the theory of smelting. III. Equilibria between pairs of metals and sulphur. The system, copper-antimony-sulphur, A., ii, 589.
- Guertler, *William Minot*, and *Karl Leo Meissner*, theory of smelting. IV. Equilibrium between metal-pairs and sulphur. The system, copper-manganese-sulphur, A., ii, 640.
- Gaichard, *Marcel*, the general study of catalysis, A., ii, 390.
- Guild, *F. N.*, flagstaffite, a new mineral, A., ii, 51.
- Guillaume, *Ch. Éd.*, cause of the instability of nickel steels; its elimination, A., ii, 50.
- Guillemand. See *Alexandre Desgrez*.
- Guillet, *Léon*, the tempering of brasses containing tin, A., ii, 405.
- Gunn, *J. A.*, agglutination by ricin, A., i, 281.
- Guntz, *A. A.*, an apparatus for registering variations of a gaseous mass with time, A., ii, 389.
- Gupta, *Biraj Mohan*, an investigation on the influence of negative groups of different character on the reactivity of hydrogen atoms carried by the same carbon atom. I, T., 298.
- Gutbier, *Alexander*, and *P. Beckmann*, protective colloids. IX. Isinglass as protective colloid. I. Colloid chemical investigation of isinglass, A., ii, 312.
- Gutbier, *Alexander*, and *R. Emslander*, colloidal selenium, A., ii, 636.
- Gutbier, *Alexander*, *Ferdinand Falco*, and *Th. Vogt*, alkali pentachloro- and pentabromo-ruthenates [ruthenochlorides and ruthenobromides], A., ii, 457.
- Gutbier, *Alexander*, and *Ferdinand Flury* [with *Fr. Heinrich*], effect of freezing on colloidal selenium, A., ii, 693.
- Gutbier, *Alexander*, *J. Huber*, and *R. Haug*, protecting colloids. X. Saponin as protecting colloid. I. General colloid-chemical investigation on guaiacum-saponin and quillain-saponin, A., ii, 537.
- protecting colloids. X. Saponin as protecting colloid. II. Colloidal gold, A., ii, 538.
- Gutmann, *August*, action of normal sodium arsenite on thiocyanate-compounds, A., i, 653.
- Guttmann, *Ernst*. See *Martin Freund*.
- Guye, *Philipp Auguste*. See *August L. Bernoulli*.
- Gyemant, *A.*, electro-endosmosis and ion adsorption, A., ii, 298.
- Gyemant, *A.* See also *Lexner Michaelis*.
- György, *Paul*. See *Ernst Freudenberg* and *Peter Rona*.
- Gyulay, *J. con.* See *G. Klemp*.

H

- Haacke, A.** See *Robert Schwarz*.
- Haag, J. R.** See *A. G. McCall*.
- Haakh, Hermann**, preparation of hydroxy-aryl aldehydes, A., i, 729.
- Haar, Anne Wilhelm van der**, saponins. IV. The saponins of the nuts of *Pseudophanie vinifera*, Beccari, and their magnesium and calcium salts, A., i, 877.
- Haas, Arthur**, rotation spectra and isotopy, A., ii, 286.
- Haas, A. R. C.** See *Winthrop John Vanleuren Osterhout*.
- Haas, Friedrich Wilhelm.** See *Theodor Curtius*.
- Haas, Paul**, carrageen (*Chondrus crispus*). II. The occurrence of ethereal sulphates in the plant, A., i, 839.
- Haberland, E.** See *Arthur Binz*.
- Haack, Ingo W. D.**, the structural relation of isoquinoline- and phenanthrene-alkaloids, A., i, 800.
- Hackspill, Louis**, and *E. Botolfsen*, the preparation of calcium carbide from calcium ammonium and acetylene, A., ii, 549.
- Hadjopoulos, L. G.** See *M. Kahn*.
- Haefen, F. E. van.** See *Arnold Frederik Holleman*.
- Haehl, A.** See *J. Martinet*.
- Hähle, Herbert.** See *Roland Scholl*.
- Haehn, Hugo**, exact demonstration of tyrosinase; the tyrosinase reaction, A., ii, 528.
colloid-chemical phenomena in the tyrosinase reaction, A., ii, 579.
- Haendel, L.**, and *K. W. Joetten*, chemotherapeutic experiments with "205 Bayer," a new trypanocidal agent of special activity, A., i, 908.
- Hänggi, Eugen**, nitrobenzoates of the three cresols, A., i, 244.
- Haenseler, C. M.**, effect of salt proportions and concentrations on the growth of *Aspergillus niger*, A., i, 836.
- Haerdtl, H.** See *Maximilian Samec*.
- Härtel, Gustav.** See *Robert Behrend*.
- Häuber, Hans.** See *Atalar Skita*.
- Hagen, Oskar**, modified Soxhlet extraction apparatus, A., ii, 104, 502, 634.
- Hagenböcker, Alfred.** See *Maximilian P. Schmidt*.
- Hagendorn, Max.** See *Paul Horrmann*.
- Haggard, Howard W.**, and *Yundell Henderson*, respiration and blood alkali during carbon monoxide asphyxia, A., i, 752.
- Hahn, Amandus**, method of action and electrolytic nature of diastatic ferments, A., i, 523.
- Hahn, Amandus**, and *Georg Barkan*, interconversion of creatine and creatinine. I. and II, A., i, 515.
- Hahn, Amandus**, and *Rudolf Michaelik*, the influence of neutral alkali salts on diastatic enzymes. III. Investigations on pancreatic diastase, A., i, 282.
- Hahn, F.**, detection of methyl alcohol in spirits, A., ii, 281.
new apparatus for the generation of gas, A., ii, 634.
- Hahn, Fred C.**, 4-methylbenzophenone chloride and its condensation with phenol, A., i, 243.
- Hahn, Friedrich L.**, and *Peter Philippi*, quantitative separation of arsenic, antimony, and tin, A., ii, 524.
- Hahn, Friedrich L.**, and *H. Walter*, hexamethylenetetramine. I., A., i, 651.
- Hahn, Friedrich Vincca von**, colour changes on coagulating sulphide hydrosols, A., ii, 46.
sulphide sols. II. Sol preparation by means of gaseous hydrogen sulphide, A., ii, 577.
quantitative methods of coagulation for suspensions, A., ii, 684.
- Hahn, Otto**, a new radioactive substance in uranium, A., ii, 478.
origin of uranium-Z, A., ii, 479.
- Hahn, Otto**, and *Lise Meitner*, application of the displacement rule to the case of substances emitting simultaneously both α - and β -rays, A., ii, 148.
the properties of protoactinium. II. Life period and content in uranium minerals, A., ii, 150.
- Hainsworth, W. R.**, and *E. F. Tins*, absorption of carbon monoxide by cuprous ammonium carbonate solutions, A., ii, 259.
- Halban, Hans von**, and *Herbert Geigel*, use of photo-electric cells in the measurement of light absorption by solutions, A., ii, 145.
photochemistry of tetrabenzyldiphenylene, A., ii, 147.
- Halberkann, Josef**, acetic acid derivatives of *p*-anisidine, A., i, 562.
transformation and hydrolysis of toluene-*p*-sulphonyl-*p*-anisidine and its *N*-methyl derivative, A., i, 660.
transformation or (and) hydrolysis of the toluene-*p*-sulphonyl compounds of certain *p*-substituted anilines and their *N*-alkyl derivatives, A., i, 773.
- Halberkann, Josef.** See also *G. Giemes*.
- Haldane, J. B. S.**, regulation of the alkalinity of the blood, A., i, 904.

- Haldane, J. B. S.** See also *H. W. Davie*.
Hall, Archibald John. See *Arthur Ernest Everest*.
Hall, Claud H., jun., system of qualitative chemical analysis for the positive ions, A., ii, 651.
Hall, J. S. See *R. Adams Dutcher*.
Haller, Albin, and (Mme.) Pauline Ramart-Lucas, the two methyl *d*-allylcamphorcarboxylates, the three propan- β -olcamphorcarboxylolides, and the camphopropan- β -ol which is derived from them, A., i, 673.
 the products of reduction of dimethylcampholamide, A., i, 874.
Haller, Herbert L. See *Elliot Quincy Adams and Louis A. Mikeska*.
Haller, R., adsorption compounds. III., A., ii, 21.
 colour behaviour of congo-rubin, A., ii, 28.
 behaviour of cotton and wool toward substantive dyes, A., ii, 576.
Hallimond, A. F. [with *J. H. Whiteley*], monticellite crystals from a steel-works mixer slag, A., ii, 702.
Hamel, J. P., the γ -chloroacetoacetic esters, A., i, 537.
Hamel, J. P. See also *Marcel Sommelet*.
Hamer, (Miss) Frances Mary, a comparison of some isomeric isocyanines, T., 1432.
Hammarsten, Einar, a "coupled" nucleic acid from the pancreas, A., i, 290.
Hammarsten, Olof, action of chymosin and pepsin. VI. Preparation of pure stomach enzymes and observations on their action, A., i, 138.
Hammer, Fritz. See *Johannes Gadamer*.
Hammet, L. See *Hermann Staudinger*.
Hammett, Frederick S., creatine and muscle tonus in man, A., i, 530.
 creatinine and creatine in muscle extracts. I. A comparison of the picric acid and the tungstic acid methods of deproteinisation. II. The influence of the reaction of the medium on the creatinine-creatine balance in incubated extracts of muscle tissue of the albino rat, A., i, 906.
Hamnick, Dalsiel Llewellyn, rate of reaction of picric acid with nitrating acid, A., i, 239.
 surface energy, latent heat, and compressibility, A., ii, 84.
Hamnick, Dalsiel Llewellyn, and John Mylne Mullaly, the dimorphism of potassium ethyl sulphate, T., 1802.
Hanáková, V. See *Jiri Baborovský*.
Hance, F. E. See *F. H. Rhodes*.
Handovsky, Hans, and Arthur Weil, swelling of colloidal mixtures. I., A., ii, 92.
Handovsky, Hans. See also *Emil Abderhalden*.
Hanke, Martin. See *Julius Stieglitz*.
Hannevart, Germaine, presence of calcium thiosulphate in *Achromatium oxaliferum*, Schew, A., i, 643.
Hannevart, Germaine. See also *M. Philippson*.
Hannik, M., the oxidation of ferrous salts by potassium ferricyanide, A., ii, 655.
Hannum, Ethel. See *F. M. Huntoon*.
Hantzsch, Arthur [Rudolf], the constitution of the salts derived from isatin and analogous substances, A., i, 598.
Hantzsch, Arthur [with *J. Retinger, and Felix Krämer*], tervalent carbon as chromophore in the halochromism of the alloxantins and analogous substances, A., i, 619.
Hantzsch, Arthur [with *M. Stechow*], actual and supposed isomerism in the isatin series, A., i, 597.
Hansch, Julia. See *Ernst Philippi*.
Hanzlik, Paul J., the salicylates. XIII. The liberation of free salicylic acid from salicylate in the circulation, A., i, 698.
Hanzlik, Paul J., and A. Irvine, toxicity of some thiouracils and thiuramdisulphides, A., i, 701.
Hara, Ryōsaberō, use of chemically precipitated iron in the synthetic production of alkali cyanide, A., i, 545.
Hara, Shōhei, physiological action of oxalates, citrates, and tartrates, A., i, 478.
Harden, Arthur, and Francis Robert Henley, effect of acetaldehyde and methylene-blue on the fermentation of dextrose and levulose by yeast-juice and zyma in presence of phosphate and arsenate, A., i, 480.
 the salt effect in alcoholic fermentation, A., i, 642.
Harden, Arthur, and Sylvester Solomon Zilva, the synthesis of vitamin-B by yeasts, A., i, 702.
Harder, W. See *P. Karrer*.
Harding, Leonard, the melting points of mixtures of *o*- and *p*-toluenesulphonyl chlorides, T., 260.
 the sulphonation of toluene with chlorosulphonic acid, T., 1261.
Harding, Watson G., experiments on wood cellulose, A., i, 402.

- Hardy, F.**, the occurrence of different kinds of carbonates in certain soils, A., i, 215.
- Harger, Rolla N.**, a direct method for the estimation of dicyanodiamide in cyanamide and mixed fertilisers, A., ii, 224.
- Härl, Paul**, the absorption of light by reduced hemoglobin, A., ii, 287.
- Harkins, William Draper**, ionisation of strong electrolytes, A., ii, 160.
- natural systems for the classification of isotopes, and the atomic weights of pure atomic species as related to nuclear stability, A., ii, 445.
- constitution and stability of atom nuclei, A., ii, 582.
- isotopes; their number and classification, A., ii, 690.
- Harkins, William Draper**, and **Y. C. Cheng**, orientation of molecules in surfaces. VI. Cohesion, adhesion, tensile strength, tensile energy, negative surface energy, interfacial tension, and molecular attraction, A., ii, 242.
- Harkins, William Draper**, and **Warren W. Ewing**, surface energy of mercury and the energy relations at the interface between mercury and other liquids, A., ii, 87.
- Harkins, William Draper**, and **E. H. Grafton**, surface tension and molecular attraction; the adhesional work between mercury and organic liquids, A., ii, 87.
- Harkins, William Draper**. See also **George L. Clark**.
- Harloff, Erich**. See **Ernst Sieburg**.
- Harms, Herbert**. See **Karl W. Rosenmund**.
- Harrel, C. G.** See **Frank Burnett Dains**.
- Harries, Carl Dietrich**, purification of mercury, A., ii, 552.
- Harries, Carl Dietrich**, and **Fritz Evers**, the purification of mercury, A., ii, 698.
- Harris, J. Arthur, Ross Aiken Gortner**, and **John V. Lawrence**, the osmotic concentration and electrical conductivity of the tissue fluids of ligneous and herbaceous plant., A., i, 483.
- Harris, John Edmund Guy**. See **William Hobson Mills**.
- Harrison, Arthur P.**, comparative results with Scales's (zinc-copper couple) and Devarda's alloy for reducing nitric nitrogen, A., ii, 345.
- Harrop, G. A., jun.**, estimation of lactic acid in blood, A., ii, 715.
- Harshaw, H. M.** See **L. Adams Dutcher**.
- Harst, J. C. van der**, and **C. H. Koers**, the estimation of sugar in urine, A., ii, 601.
- Hart, D.** See **Louis J. Curtman**.
- Hart, Edwin Bret, H. Steenbock**, and **C. A. Hoppert**, dietary factors influencing calcium assimilation. I. The comparative influence of green and dried plant tissue, cabbage, orange juice, and cod-liver oil on calcium assimilation, A., i, 829.
- Hart, Merrill C.**, and **Arthur D. Hirschfelder**, mercury compounds of some phenylcarbinols, A., i, 140.
- Hart, William Beaumont**, origin, development, and value of the thalleioquinine reaction, A., ii, 359.
- Hartleben, Hans**, the adsorption of alkali chlorides by animal charcoal, A., ii, 304.
- Hartmann, A. P.** See **Philip Anderson Shaffer**.
- Hartmann, W.** See **Karl Fries**.
- Hartree, W.**, and **Archibald Vician Hill**, regulation of the supply of energy in muscular contraction, A., i, 527.
- Hartridge, H.**, nitrite methemoglobin and related pigments, A., i, 135.
- Hartridge, H.**, and **R. A. Peters**, surface tension of oil-water interfaces, A., ii, 87.
- Hartwig, L.**, and **R. Saar**, detection of lactic acid, A., ii, 356.
- Harvey, Mortimer**, and **L. H. Baekeland**, phenolic hexamethylenetetramine compounds, A., i, 239.
- Harvey, Thomas Featherstone**, and **S. Back**, estimation of strychnine in scale preparations containing quinine and other cinchona alkaloids, A., ii, 471.
- Haselhorst, G.**, estimation of bilirubin in blood serum, A., ii, 472.
- Hashimoto, Tokudji**. See **Tokuchi Sasaki**.
- Hashitani, Yoshitaka**, occurrence of hordenine in seedlings of cereals, A., i, 86.
- Hassan, K. Habib**. See **Gilbert John Fowler**.
- Hasselskog, Sven**, estimation of hydrogen peroxide by means of stannous chloride, A., ii, 651.
- Hastings, A. Baird**, a hydrogen electrode vessel adapted for titrations, A., ii, 460.
- Hastings, A. Baird, C. D. Murray**, and **H. A. Murray, jun.**, chemical changes in the blood after pyloric obstruction in dogs, A., i, 279.
- Hatcher, W. H.** See **Otto Maass**.

- Ratschek, Emil**, viscosity of suspensions of blood corpuscles, A., i, 72.
- Raug, R.** See *Alexander Gutbier*.
- Haughton, John L.**, the constitution of the alloys of copper with tin. III. and IV., A., ii, 641.
- Haughton, John L.**, and *Kathleen E. Bingham*, constitution of alloys of aluminium, copper, and zinc containing high percentages of zinc, A., ii, 335.
- Haurowitz, Felix**, an investigation of the fats of the gonads of *Rhizostoma caryeri*, A., i, 206.
- Häuser, Enriqué**, spot reactions in qualitative analysis, A., ii, 341.
- Häuser, Enriqué**, estimation of sulphur in oils, A., ii, 517.
- Häuser, Ernst**, and *Ernst Rie*, a flame with very high temperature, A., ii, 623.
- Hanknecht, P.** See *Edgar Wedekind*.
- Hausmann, W.**, and *W. Kerl*, oligodynamic hemolysis, A., i, 113.
- Haw, A. B.** See *William Albert Noyes*.
- Haward, William Arthur**. See *William Arthur Bone*.
- Hawley, P. G.**, new modification of the electrolytic estimation of copper, A., ii, 216.
- Haworth, H. F.**, the measurement of electrolytic resistance using alternating currents, A., ii, 373.
- Haworth, Robert Downs**, and *Arthur Lapworth*, reduction of emulsified nitro-compounds. II. Some extensions of the method, T., 768.
- Haworth, Walter Norman**, and *Edmund Langley Hirst*, the constitution of the disaccharides. V. Cellobiose (cellose), T., 193.
- Heath, Fred H.**, and *Waldo L. Semon*, reaction between selenium monochloride and ethylene, A., i, 6.
- Hecht, N. H.** See *Louis J. Curtman*.
- Hedelius, Arrid Hj.**, removal of halogens from some organic compounds, A., ii, 182.
- Hedelius, Arrid Hj.** See also *Hans von Euler*.
- Hedestrand, Gunnar**, viscosities of solutions of amino-acids, A., i, 546.
- Hedin, Sven Gustav**, proteolytic enzymes in normal and pathological urines, A., i, 531.
- Hedley, Thomas Johnson**, an improved gas combustion furnace for use in organic analysis, T., 1212.
- Hedvall, J. Arrid**, and *Josef Heunberger*, a hitherto unknown copper aluminate of the spinel type, A., ii, 508.
- Heering, Harry**. See *Hermann Leuchs*.
- Heft, Hattie L.** See *Walter H. Eddy*.
- Heidelberger, Michael**. See *Walter Abraham Jacobs*.
- Heidhausen, G.**, the chemical constants, A., ii, 240.
- Heidrich, Dorothea**. See *Heinrich Eiltz*.
- Heiduschka, Alfred**, and *F. Englert*, estimation of glycerol in wine by conversion into acetaldehyde by means of boric acid, A., ii, 524.
- Heiduschka, Alfred**, and *A. Steinruck*, the fat of *caballus equus*, A., i, 833.
- Heiduschka, Alfred**, and *Ludwig Wolf*, reactions of alkaloids with silico- and phosphotungstic acids, A., ii, 469.
- Heilbron, Isidor Morris**, and *Johannes Subrandt Buck*, the reactivity of doubly-conjugated unsaturated ketones. I. 4'-Dimethylamino-2-hydroxydistyryl ketone, T., 1500.
- Heilbron, Isidor Morris**, and *Johannes Subrandt Buck*, the reactivity of doubly-conjugated unsaturated ketones. II. The action of hydroxylamine, semicarbazide, and phenylhydrazine on 4'-dimethylamino-2-hydroxydistyryl ketone and its methyl ether, T., 1515.
- Heilbron, Isidor Morris**. See also *Edward Charles Cyril Baly*.
- Hein, Franz**, organo-chromium compounds. I. Chromium pentaphenyl hydride, A., i, 826.
- Heinrich, Fr.** See *Alexander Gutbier*.
- Heintze, S.** See *Hans von Euler*.
- Heinzelmann, A.**, estimation of mercury in its ores, A., ii, 521.
- Heise, P.** See *Karl W. Rosenmund*.
- Helderman, W. D.**, the existence of hydrated or anhydrous compounds of sucrose with certain salts, A., i, 225.
- Helderman, W. D.**, compounds of dextrose with salts, A., i, 396.
- Helderman, W. D.** See also *Ernst Cohen*.
- Helferich, Berthard**, synthesis of methyl cyclohexane-1:4-dione-2:3-dicarboxylate, an orthoisomeride of succinylsuccinic ester, A., i, 185.
- Helferich, Berthard**, and *Walter Dommer*, derivatives of γ -aminovaleraldehyde, A., i, 51.
- Helferich, Berthard**, and *Oskar Lecher*, γ -hydroxyaldehydes. III. γ -hydroxy- γ -phenyl- α -butaldehyde, A., i, 421.
- Helfrich, Oregon B.**, and *Ebenzer Emmet Reid*, perchloromethyl mercaptan, A., i, 300.

- Heller, *Gustav*, the constitution of isatin salts and isatol, A., i, 891.
- Heller, *Gustav* [with *Franz Bobach*], isocureumin, III, A., i, 423.
- Heller, *Gustav*, and *Paul Jacobsohn*, comparative preparation of derivatives of isatin, phthalimide, succinimide, and *o*-hydrazinobenzoic anhydride, A., i, 440.
- Heller, *Gustav*, and *Hugo Kretschmann*, 1:8-dihydroxynaphthalene, A., i, 458.
- Hellriegel, *Emil*. See *Hermann Leuchs*.
- Hellsing, *Gustaf*, composition of Swedish shale oil, A., i, 549.
- Helmkamp, *R. W.* See *Tenney L. Davis*.
- Helwert, *Fritz*. See *Hartwig Franzen*.
- Helwig, *Edward L.*, estimation of hyposulphites and sulphonylates, A., ii, 653.
- Henmendinger. See *Alexandre Desgrez*.
- Hemsalech, *Gustave Adolphe*. See (*Comte*) *Arnaud de Gramont*.
- Henderson, *George Gerald*, and *Joseph Kenneth Marsh*, contributions to the chemistry of the terpenes. XX. The action of hypochlorous acid on pinene, T., 1492.
- Henderson, *G. H.*, range and ionisation of the α -particles from radium-C and thorium-C, A., ii, 617.
- Henderson, *Laurence Joseph*, blood as a physico-chemical system, A., i, 473.
- Henderson, *William F.* See *John C. Hessler*.
- Henderson, *Yandell*. See *Howard W. Haggard*.
- Hendrixson, *W. S.*, electro-titration of hydriodic acid and its use as a standard in oxidimetry, A., ii, 273.
- Henglein, *Fr. A.*, chemical constants and critical data, A., ii, 163.
- Henglein, *Fr. A.*, state of aggregation of the elements and the atom model, A., ii, 322.
- Henke, *C. O.*, and *Olivier W. Brown*, electrolytic preparation of sodium permanganate, A., i, 115.
- Henley, *Francis Robert*. See *Arthur Harden*.
- Henning, *Fritz*, the heat of vaporisation of water as a function of the temperature, A., ii, 167.
- Henning, *Fritz*, power of emission of the metals and methods for its determination, A., ii, 235.
- Henning, *Fritz*, heat of combustion of benzoic acid, naphthalene, and sucrose, A., ii, 379.
- Henning, *Fritz*. See also *Alfred Stock*.
- Henrich, *Ferdinand* [*August Karl*], constituents of fir tree resin (turpentine from *Pinus sylvestris*), A., i, 679.
- Henrich, *Ferdinand*, the accumulation of radioactive substance in ferruginous spring deposits, A., ii, 617.
- Henrich, *Ferdinand* [with *N. Matulka*, *Gust. Opfermann*, *K. Roedel*, *F. Rossteutscher*, and *W. Wunder*], relation between fluorescence and chemical constitution in benzoxazole derivatives, A., i, 886.
- Henriques, *Valdemar*. See *Rich. Ege*.
- Henry, *Thomas Anderson*, and *Henry Paget*, chenopodium oil, T., 1714.
- Henstock, *Herbert*, the bromine compounds of phenanthrene. I, T., 55.
- Henstock, *Herbert*, 9:10-dihydrophenanthrene, T., 1461.
- Hepburn, *N. W.*, a modified Babcock method for determining fat in butter, A., ii, 716.
- Hepworth, *Harry*, the action of the Grignard reagent on certain nitric esters, T., 251.
- Hepworth, *Harry*, the action of the Grignard reagent on certain trivalent organo-iodo-compounds, T., 1244.
- Hepworth, *Harry*, accelerated formation of magnesium alkyl and aryl haloids, T., 1249.
- Hepworth, *Harry*, and *Henry William Clapham*, the action of the Grignard reagent on certain organo-sulphur compounds, T., 1188.
- Herbert, *Alfred Edwin*. See *British Dyestuffs Corporation, Ltd.*
- Hérissey, *Henri*, the hydrolysis of a methyl- α -mannoside by soluble ferment, A., i, 306, 523.
- Hérissey, *Henri*, synthesising action of α -methyl-mannosidase, A., i, 628.
- Heries, *Fr.*, inversion-constants for the Clerget-Herzfeld method, A., ii, 418.
- Hermanns, *Leo*, and *P. Sachs*, the nature of Ehrlich's diazo-reaction. I and II, A., i, 531.
- Hermanns, *P. H.*, iodometric estimation of acetone, A., ii, 467.
- Hermanns, *P. H.* See also *Joach Böeseken*.
- Hermendorf, *A.* See *Adolf Sieverts*.
- Herrdeggen, *Leonhard*. See *Ernst Müller*.
- Herrmann, *Lisbeth*. See *Heinrich Biltz*.
- Herschkowitzsch, *M.*, the decomposition of oxalates, A., i, 495.
- Hertz, *Gustav*, absorption boundaries in the L-series, A., ii, 144.

- Hers, Walter** [*Georg*], critical data and valency in organic compounds, A., ii, 163.
- calculation of the specific heats of gases. I. and II., A., ii, 299, 673.
- surface tension and heat of vaporisation, A., ii, 301.
- heat of vaporisation and critical data, A., ii, 301.
- calculation of the van der Waals' constants *a* and *b*, A., ii, 301.
- vapour pressure regularities. IV., V., and VI., A., ii, 302, 482.
- thermal expansion of liquids, A., ii, 374.
- temperature and degree of polymerisation, A., ii, 436.
- number of atoms and the physical behaviour of organic liquids, A., ii, 434.
- refraction of light of non-associated liquids, A., ii, 529.
- relationships of the van der Waals' constants, A., ii, 573.
- Hers, Walter**, and **Julius Meyer**, applicability of Mendelëv's rule in the case of benzene and its halogen-substitution products, A., ii, 381.
- Hers, Walter**. See also **Richard Lorenz**.
- Herzberg, Otto W.** See **Otto Maass**.
- Hertzfeld, E.**, and **R. Klinger**, the chemistry of the polysaccharides, A., i, 97.
- are there any protective enzymes against the polysaccharides? A., i, 286.
- Hertzfeld, Karl F.**, application of statistics to chemical equilibria, A., ii, 313.
- kinetic theory of osmotic pressure, A., ii, 334.
- Hertzfeld, Karl F.** See also **Kasimir Fajans**.
- Herzig, Josef**, the methylation of proteins, A., i, 65.
- the free amino-groups of the proteins. III., A., i, 199.
- Herzig, Josef**, and **Marianne Schleiffer**, benzoic acid, A., i, 244.
- Herzig, Josef**, and **S. Zeisel**, tautomerism of resorcinol, A., i, 663.
- Herzog, Reginald Oliver**, and **Franz Beck**, the solubility of cellulose in [solutions of] the salts of the alkali and alkaline earth metals, A., i, 97.
- Herzog, Reginald Oliver**, and **K. Becker**, crystallising power of compounds of high molecular weight, A., ii, 438.
- Herzog, Reginald Oliver**, and **Willi Jancke**, the physical structure of some organic compounds of high molecular weight, A., i, 12.
- Röntgen-spectrographic observations on cellulose, A., i, 308.
- Röntgen-spectrographic investigations of organic substances of high molecular weight, A., ii, 531.
- Herzog, Reginald Oliver**. See also **R. Becker**.
- Herzog, Walter**, the relationship between resinification and the constitution of chemical compounds, A., i, 519.
- Herzog, Walter**, and **I. Kreidl**, separation of *o*- and *p*-toluenesulphonamides, A., ii, 357.
- Hess, A. F., G. F. McCann**, and **A. M. Pappenheimer**, experimental rickets in rats. II. The failure of rats to develop rickets on a diet deficient in vitamin-A, A., i, 757.
- Hess, Kurt**, constitution of cellulose, A., i, 12.
- the degradation of scopoline, A., i, 683.
- Hess, Kurt**, and **Franz Anselm**, hygrine alkaloids. IV. Di-1-methyl-2-pyrrolidylmethane, A., i, 881.
- Hess, Kurt**, and **Ernst Messmer**, cellulose. III. Asymmetric structure of cellulose and the influence of ammoniacal copper hydroxide [Schweizer's reagent] on the rotation of carbohydrates, A., i, 401.
- Hess, Kurt**, and **Ernst Messmer** [with **E. A. Kietzl**], syntheses of aliphatic acyl derivatives of the sugar group. I., A., i, 305.
- Hess, Kurt**, and **Heinrich Rheinboldt**, the reducing action of the Grignard reagent and the existence of magnesium hydrogen haloid, A., i, 777.
- Hess, Kurt**, **Walter Wittelsbach**, and **Ernst Messmer**, cellulose. IV. Depolymerisation of ethylcellulose, A., i, 710.
- Hess, L.** See **Hermann Thoms**.
- Hess, Viktor F.**, and **Maria Hornyak**, relative ionisation of different gases by α -rays, A., ii, 292.
- Hess, W. R.**, theory of the viscosity of heterogeneous systems, A., ii, 18.
- Hesse, (Fr.) Margarete**. See **Ernst Hermann Riesenfeld**.
- Hessler, John C.**, and **William F. Henderson**, butyl- and isobutyl-cyanoacetic acids, A., i, 317.
- Hessler, John C.**, and **Robert M. Lamb**, alkyl cyanoacetic esters, A., i, 231.
- Hetényi, Géza**. See **Stefan Rusznyak**.

- Hettner, Gerhard**, influence of an external field on the rotation spectrum; analogy to the Stark effect, A., ii, 139.
- regularities in the infra-red spectra of gases and their significance, A., ii, 144.
- Heuberger, Joseph**. See *J. Arrid Hedvall*.
- Heuser, Emil**, and *E. Boedeker*, wood cellulose, A., i, 708.
- Heuser, Emil**, and *G. Wenzel*, comparative estimations of lignin in cellulose, A., ii, 715.
- Heuser, Emil**, and *A. Winsvoid*, the formation of oxalic acid from lignin, A., i, 845.
- Hevesy, Georg von**, velocity of migration of the ions in crystals, A., ii, 172.
- the mobility of univalent organic ions, A., ii, 236.
- mobility of ions which are common with those of the solvent, A., ii, 295.
- Hewett, D. Foster**, and *Earl V. Shannon*, orientite, a new hydrous silicate of manganese and calcium, from Cuba, A., ii, 460.
- Hewlett, C. W.**, the mass absorption and mass scattering coefficients for homogeneous X-rays of wave-length between 0.13 and 1.05 Ångström units in water, lithium, carbon, nitrogen, oxygen, aluminium, and iron, A., ii, 674.
- Heyde, H. C. van der**, natural immunity of the rabbit to atropine, A., i, 478.
- Heydweiller, Adolf**, electrical conductivity and density of aqueous solutions of electrolytes, A., ii, 481.
- Heygendorff, W. von**, a rotary burner, A., ii, 545.
- Heyn, Myron**. See *Heinrich Biltz*, and *Fritz Hofmann*.
- Hickinbottom, Wilfred John**. See *Gilbert Thomas Morgan*.
- Hieber, Walter**, applications of complex-chemistry to the problems of organic chemistry. I. A new method for the titration of enols in keto-enolic mixtures, A., ii, 466.
- Hiedemann, Egon**, the electronic synthesis of chemical compounds. I. Formation of ammonia, A., ii, 694.
- Higson, Geoffrey Isherwood**, the reaction between persulphates and silver, T., 2048.
- Hilbert, Alfred**. See *Richard Anschütz*.
- Hildebrand, Joel H.**, solubility. VI. Thermodynamic relation between solubility and internal pressure, A., ii, 307.
- Hildebrand, Joel H.**, and *Theo. F. Buehrer*, solubility. V. Critical solution temperatures of white phosphorus with various liquids, A., ii, 24.
- Hildebrand, Joel H.**, and *Clarence A. Jenks*, solubility. IV. Solubility relations of naphthalene and iodine in the various solvents, including a method for evaluating solubility data, A., ii, 23.
- Hilditch, Thomas Percy**. See *Edward Frankland Armstrong*.
- Hill, Arthur E.**, distribution of a strong electrolyte between water and benzene, A., ii, 261.
- Hill, Arthur Joseph**, and *J. J. Donleavy*, amines. IX. Alkylation of aromatic amines by heating with aliphatic alcohols, A., i, 714.
- Hill, Archibald Fyvie**. See *W. Hartree*.
- Hillebrand, William Francis**, and *Constance Ernst Fred Lundell*, volatilisation losses of phosphorus during evaporations of phosphates with sulphuric acid or fusions with pyrosulphate, A., ii, 129.
- Hinsberg, Oscar**, preparation of a compound of chloral with a phenol, A., i, 341.
- Hinsberg, Oscar**, and *E. Roos*, [the nature of] yeast fat, A., i, 148.
- Hinshelwood, Cyril Norman**, some physico-chemical problems connected with the stability of explosives, T., 721.
- Hinshelwood, Cyril Norman**, and *E. J. Bowen*, influence of physical conditions on the velocity of decomposition of certain crystalline solids, A., ii, 443.
- Hintikka, S. V.**, preparation of p-nitro-toluene-o-sulphonic acid from *γ*-mene, A., i, 332.
- constitution of lignin, A., i, 772.
- Hirai, Kinsaburo**, the synthesis of *d*-3:4-dihydroxyphenylalanine, A., i, 248.
- the formation of *p*-hydroxyphenylacetic acid and *p*-hydroxyphenylacrylic acid from tyrosine by means of bacterial action, A., i, 291.
- Hirasawa, Masaru**. See *Rudolf Incey*.
- Hirsch, Edwin F.**, rigor mortis in smooth muscle and a chemical analysis of fibromyoma tissue, A., i, 476.
- Hirsch, Julius**. See *Carl Neuberg*.
- Hirschfelder, Arthur D.**. See *Merrill C. Hart*.
- Hirst, Edmund Langley**. See *Walter Norman Haworth*.

- Hieschemüller, F. W., the equilibria of permutites, A., ii, 495.
- Hjalmar, Elis, precision measurements in the L-series of the Röntgen spectra; elements tungsten to copper, A., ii, 145.
- precision measurements in the X-rays spectra. IV. K-series, the elements copper to sodium, A., ii, 292.
- Hjort, A. M., and C. E. Kaufmann, the local anæsthetic properties of benzoylcarbinol, A., i, 834.
- Hogland, D. R., and J. C. Martin, effect of season and crop growth on the physical state of the soil, A., i, 215.
- Hogland, D. R., J. C. Martin, and G. R. Stewart, relation of the soil solution to the soil extract, A., i, 214.
- Hobart, F. B. See S. A. Braley.
- Hodges, E. Rattenbury, aluminium, A., ii, 589.
- Hodges, James Hallett. See Gregory Paul Baxter.
- Hollesman, H. J., apparatus for sodium peroxide fusions, A., ii, 345.
- Höber, Rudolf, the [physiological] action of calcium, A., i, 74.
- Hodlake, (Mlle.) J. M. A., the nitration of the phenyl carbonates, A., ii, 540.
- Höfer, Karl, and A. Stiegler, an abnormal permeability [of epidermal cells] for urea solutions, A., i, 642.
- Hönigschmid, Otto, and Lothar Birkenbach, revision of the atomic weight of bismuth; analysis of bismuth chloride and bismuth bromide, A., ii, 646.
- Hoeven, C. van der. See Arnold Frederik Holleman.
- Hoffmann, J. I. See Gustave Ernst Fred Lundell.
- Hoffmann, Hans, electrolysis of hot concentrated sulphuric acid, A., ii, 677.
- Hofmann, Fritz, and Myron Heyn, polycyclic phenols from sodium phenoxide fusions, A., i, 506.
- Hofmann, Karl Andreas, separation and identification of lactic acid as complex ferric sodium lactate, A., ii, 221.
- Hofmann, Karl Andreas, and Gustav Buhk, reactions of salts of nitrous acid with weak bases, A., ii, 43.
- Hofmann, Karl Andreas, and Wilhelm Freyer, colloids soluble in water from artificial charcoals, A., i, 8.
- Hofmann-Meyer, Alice. See Hans Meyer.
- Hofwimmer, Franz, preparation of guanidine salts, A., i, 320.
- Hohl, Heinz. See Robert Kremann.
- Holbell, Stead Aage, Bang's micro-method for the estimation of dextrose, A., ii, 283.
- Holborn, Ludwig, the isothermals of hydrogen, A., ii, 15.
- Holdé, David, and Ida Tacke, anhydrides of the higher aliphatic fatty acids, A., i, 842.
- Holden, Edw. F., sarcoside from New Hampshire, A., ii, 268.
- Holker, J., methods of measuring the opacity of liquids; relation between the number and size of red corpuscles and the opacity of their suspensions; relation between the microscopic appearance of precipitated calcium oxalate and the opacity of its suspensions; opacity of serum diluted with distilled water; physiologically normal saline, and Ringer's solution, A., i, 633.
- Hollander, A. I. den. See Arnold Frederik Holleman.
- Holleman, Arnold Frederik, the three tetrachlorobenzenes, A., i, 405.
- artificial "saccharin" substances, A., i, 552.
- Holleman, Arnold Frederik [with F. E. van Haeften, and C. van der Hoeven], the three tetrachlorobenzenes, pentachlorobenzene, and hexachlorobenzene; their reaction with sodium methoxide, A., i, 102.
- Holleman, Arnold Frederik, and F. E. van Haeften, the six trichloronitrobenzenes and the three trinitrobenzenes; their reaction with sodium methoxide, A., i, 167.
- Holleman, Arnold Frederik, A. I. den Hollander, and F. E. van Haeften, the nitration products of *p*-dichlorobenzene, A., i, 503.
- Hollenberg, M. S. See Alexander Thoms Cameron.
- Hollé, Julius, investigations on the cause of the variations in the reaction in normal human urine, A., i, 288.
- Holluta, Josef, and Josef Obrist, oxidimetric estimation of manganese in hydrofluoric acid solution, A., ii, 522.
- Holm, George E., and Ross Aiken Gortner, the humin formed by the acid hydrolysis of proteins. VI. The effect of acid hydrolysis on tryptophan, A., i, 65.
- Holmberg, Bror, extraction of sulphite liquors with ether and benzene, A., i, 25.
- stereochemical studies. V. Stereochemistry of dichlorosuccinic acid, A., i, 539.

- Holmberg, Bror**, kation catalysis. IV., A., ii, 319.
 lignin. I. Sulphite liquor lactone, A., i, 849.
- Holmberg, Bror**, and **Martin Sjöberg**, lignin. II. Dimethyl-sulphite-liquor lactone, A., i, 850.
- Holmberg, Bror**, and **Teodor Wintzell**, lignin. III. Alkali lignins, A., i, 850.
- Holmes, Waller C.** See **Homer Rogers**.
- Holmström, J. J.**, constituents of the roots of *Rheum emodi*, Webb, A., i, 704.
- Holzappel, E.** See **Arthur Binz**.
- Homoka, B.**, action of alkalis on glyoxal, A., i, 544.
- Honda, Kitarō**, and **Takejirō Murakami**, graphitisation in iron-carbon alloys, A., ii, 699.
- Hoover, Charles R.**, the detection of carbon monoxide, A., ii, 654.
- Hopff, Heinrich.** See **Kurt Heinrich Meyer**.
- Hopkins, Arthur J.**, **John B. Zinn**, and **Harriet Rogers**, standardisation of weights, A., ii, 104.
- Hopkins, Frederick Cowland**, effects of heat and aeration on vitamin-A., A., i, 475.
 vitamin content of milk, A., i, 477.
 an autoxidisable constituent of the cell, A., i, 635.
- Hoppert, C. A.** See **Edwin Bret Hart**.
- Horlacher, E.** See **P. Karrer**.
- Hornyak, Maria.** See **Viktor F. Hess**.
- Horrmann, Paul**, and **Wolfram Behnschmidt**, picrotoxin. II. Behaviour of the bromopicrotoxins toward concentrated halogen acids, A., i, 575.
- Horrmann, Paul**, and **Max Hagendorn**, picrotoxin. X. Degradation of α -picrotinic acid, $C_{15}H_{13}O_9$, to the acid, $C_{12}H_{11}O_4$, A., i, 347.
- Horsch, W. Grenville.** See **Robert E. Wilson**.
- Horst, Friedrich**, comparative experiments on the adsorptive capacity of various kinds of charcoal; is Wiechowski's test parallel to the poison fixation? A., ii, 245.
- Horst, F. W.**, detection and estimation of traces of hydrogen peroxide, A., ii, 461.
- Horton, Edward**, the use of taka-diastase in estimating starch, A., ii, 661.
- Horton, Frank**, and **Ann Catherine Davies**, electron velocities for the production of luminosity in atmospheric neon, A., ii, 422.
 production of radiation and ionisation by electron bombardment in pure and in impure helium, A., ii, 672.
- Houben, H.** See **Walter Fraenkel**.
- Houben, Josef**, and **G. Schreiber**, methyl dimethylaminobenzenesulphonates, and the nitrosation of *N*-methyl-anilinesulphonicacids in the nucleus, A., i, 106.
 nitrososalicylic acid and nitrosoanthranilic acid, A., i, 109.
- Howald, A. M.** See **W. D. Turner**.
- Howell, Lloyd B.**, the reaction between magnesium phenyl bromide and the esters or anhydride of phthalic acid, A., i, 42.
- Howell, Spencer P.** See **Charles E. Munroe**.
- Howes, Horace L.**, the luminescence of samarium, A., ii, 363.
- Howie, Lawrence.** See **Eric Ponder**.
- Huber, Hans**, the binary system, Ag_2S-Tl_2S , A., ii, 507.
- Haber, J.** See **Alexander Gutbier**.
- Hudleston, Lawson John**, and **Henry Bassett, jun.**, equilibria of hydrofluosilicic acid, T., 403.
- Huffer, E. J. E.**, the trichlorodinitrobenzenes; their reaction with sodium methoxide and with ammonia, A., i, 549.
- Huerre, R.**, action of hydracids on essential oil of *Juniperus communis*; hydrochloride, hydrobromide, and hydriodide of cadinine, A., i, 258.
- Hüsgen, Hans**, a lipotropic mercury compound, A., i, 145.
- Hüttig, Gustav F.**, the geometry of the co-ordination number, A., ii, 193.
 apparatus for simultaneous pressure and volume measurements of gases, A., ii, 195.
- Hüttig, Gustav F.** See also **Wilhelm Biltz**.
- Hufferd, Ralph W.**, and **William Albert Noyes**, the application of Victor Meyer's esterification law to 2,4-dimethylbenzoic acid and its reduced derivatives, A., i, 416.
- Hughes, William**, nature of chemical forces and the anomaly of strong electrolytes, A., ii, 481.
 application of the law of mass action to strong electrolytes and the derivation of the general equation of the ionisation isotherm, A., ii, 573.
- Hughes, W. E.**, structure of metal electrolytically deposited on rotating cathodes, A., ii, 677.
- Hugoson, E.** See **Leopold Ernicks**.
- Hugonnet, Louis**, and **Gabriel Floresco**, a lecture experiment on blood nitrogen, A., i, 632.
 derivatives of some amino-acids, A., i, 711.

- Hulett, *George Augustus*, and *O. A. Nelson*, graphitic acid—a colloidal oxide of carbon, A., ii, 399.
- Hull, *A. W.*, arrangement of atoms in some common metals, A., ii, 38.
- Hull, *Mary*. See *Frederic Fenger*.
- Kalot, *Pierre*, rapid estimation of copper or iron in aluminium-copper or aluminium-iron alloys, A., ii, 656.
- Hultman, *Inar N.*, *Anne W. Davis*, and *Hans Thacher Clarke*, the automatic separator in esterifications and other preparations, A., ii, 325.
- Hulton, *Henry Francis Everard*. See *Julian Levett Baker*.
- Hunter, *William Hammett*, and *Lillian M. Seyfried*, a catalytic decomposition of certain phenol silver salts. V. The action of iodine on the sodium salt of trichlorophenol, A., i, 239.
- Hunter, *William Hammett*, and *G. H. Woollett*, a catalytic decomposition of certain phenol silver salts. III. The action of mercury on tribromophenol bromide, A., i, 238.
- a catalytic decomposition of certain phenol silver salts. IV. The constitution of the amorphous oxides, A., i, 238.
- Huntingford, *D. B.* See *James Riddick Partington*.
- Hutton, *F. M.*, *P. Masucci*, and *Edith Hannum*, anti-substance studies. III. The chemical nature of anti-substances, A., i, 144.
- Hartley, *William Holdsworth*, the production of carbon monoxide by the action of alkaline hypohalogenites on carbamide, A., i, 403.
- Harwitz, *O.* See *P. Karrer*.
- Hutchinson, *Arthur*, and *A. M. Macgregor*, cornetite from Bwana Nkubwa, Northern Rhodesia, A., ii, 701.
- Hynes, *Walker A.* See *Carl P. Sherwin*.
- I.
- Ibach, *F. von*. See *Walther Dillthey*.
- Igi, *Sadon*, preparation of tetrachloroethane and trichloroethylene from acetylene and chlorine, A., i, 841.
- Iitaka, *Daidz-i*, metallographic investigation of the system, antimony sulphide-lead sulphide, A., ii, 206.
- Iwata, *Masao*, estimation of sulphate, chloride, and carbonate-ions in soda-lime glass, A., ii, 706.
- Ims, *Elmer S.*, absorption of some diatomic gases in the near infra-red, A., ii, 4.
- Inamura, *Kenzo*, hydrates of aluminium nitrate, A., ii, 114.
- Ingold, *Christopher Kelk*, the conditions underlying the formation of unsaturated and cyclic compounds from halogenated open-chain derivatives. I. Products derived from α -halogenated glutaric acids, T., 305.
- the mechanism underlying the reaction between ethyl cyanoacetate and tautomeric substances of the keto-enol type, T., 329.
- experiments on the synthesis of the polyacetic acids of methane. I. The conditions controlling synthesis by the cyanoacetic ester method, and the preparation of methanetriacetic acid, T., 341.
- the conditions underlying the formation of unsaturated and cyclic compounds from halogenated open-chain derivatives. II. Products derived from α -halogenated adipic acids, T., 951.
- Ingold, *Christopher Kelk*, and *Edward Arthur Ferren*, experiments on the synthesis of the polyacetic acids of methane. III. Conditions controlling synthesis by the cyanoacetic ester method, T., 1582.
- experiments on the synthesis of the polyacetic acids of methane. IV. Conditions of formation by the cyanoacetic ester method of stable methanetriacetic esters, T., 1865.
- Ingold, *Christopher Kelk*, and *Walter James Powell*, experiments on the synthesis of the polyacetic acids of methane. II. Some abnormal condensations of malonic and cyanoacetic esters with halogenated methanes, T., 1222.
- experiments on the synthesis of the polyacetic acids of methane. V. The preparation of carboxymethanetriacetic acid, T., 1869.
- the reversibility of the Michael reaction, T., 1976.
- Ingold, *Christopher Kelk*, and *Jocelyn Field Thorpe*, the chemistry of the glutaric acids. XII. The simultaneous occurrence of 1:2- and of 1:3-addition to "nascent" glutaric ester, T., 492.
- Ingold, *Christopher Kelk*. See also *Ernest Harold Farmer*.
- Imman, *O. L.*, comparative studies on respiration. XVI. Hypotonic and hypertonic solutions, A., i, 386.
- Inouye, *Rudzo*, *Suchiko Iwaoka*, and *Masaru Hirasawa*, comparison of the chemical constitution of tussur silks, A., i, 67.

- Inouye, Suehichi**, metallographic investigation of the system, tungsten-lead, A., ii, 205.
- Inuganti, N. N.** See *Gilbert John Fowler*.
- Ionescu, Al.**, the separation of ptomaines from vegetable alkaloids in toxicological examinations, A., ii, 226.
estimation of dextrose in glucosides, A., ii, 525.
- Ionescu, Al.**, and **V. Vargolici**, the estimation of dextrose in blood and in cephalorachidian fluid, A., ii, 220.
new method for the volumetric estimation of reducing sugars, A., ii, 283.
- Ionescu, Al.** See also *Stefan Minovici-Iredale, Thomas*, the rôle of protective colloids in catalysis, T., 109.
the soaps as protective colloids for colloidal gold, T., 625.
- Irvin, Roy.** See *Frank Burnett Dains*.
- Irvine, A.** See *Paul J. Hanzlik*.
- Irvine, James Colquhoun**, and *John Walter Hyde Oldham*, the constitution of polysaccharides. III. The relationship of L-glucosan to D-glucose and to cellulose, T., 1744.
- Isaac, Salo.** See *Erich Adler* and *Gustav Emden*.
- Iseley, R. B.** See *George L. Clark*.
- Isgariachev, N.**, electrode processes in the presence of colloids, A., ii, 620.
- Ishikawa, Seichi**, condensation of nitriles and thioamides. I. Benzonitrile and thiobenzamide, A., i, 728.
- Ishiwara, Torajirô**, magnetic determinations of A_0 , A_1 , A_2 , and A_3 points in steels containing up to 4.8 per cent. of carbon, A., ii, 643.
- Ishiwari, Nisaburô**, an alkaloid from *Sinomenium diversifolius*, A., i, 354.
- Itagaki, Takeki.** See *Yoshiharu Murayama*.
- Italiener (Frl.).** See *Ernst Hermann Riesenfeld*.
- Itallie, Leopold van**, Peru balsam and its adulteration, A., ii, 226.
- Itallie, Leopold van**, and *M. Le Coultre*, aristochin and optochin nitrates, A., i, 45.
- Itallie, Leopold van**, and *A. J. Steenhauer*, estimation of veronal in urine and human organs, A., ii, 607.
- Iversen, Poul**, the partition of phosphates between blood corpuscles and plasma in vivo and in vitro, A., i, 380.
- Iwaka, Suehiko.** See *Ryûgo Inouye*.
- Izaguirre, R.** See *Enrique Moles*.
- J.**
- Jablonski, Ludwig.** See *Hans Einbeck*.
- Jackman, Douglas Norman.** See *William Edward Garner*.
- Jackson, Daniel**, and *Jerome J. Morgan*, measurement of vapour pressures of certain potassium compounds, A., ii, 260.
- Jackson, D. H.** See *Francis P. Venable*.
- Jackson, Richard F.**, and *Clara L. Gillis*, the double-polarisation method for the estimation of sucrose and the evaluation of the Clerget divisor, A., ii, 67.
- Jacob, Werner**, 2-aldehydroanthraquinone, A., i, 794.
- Jacobs, Walter Abraham**, and *Michael Heidelberger*, syntheses in the cinchona series. VI. Aminoazo- and hydroxyazo-dyes derived from certain 5-amino-cinchona alkaloids and their quinoline analogues, A., i, 44.
- Jacobsohn, Paul.** See *Gustav Heller*.
- Jaeger, Frans Maurits**, the action of light of short wave-lengths on some organic acids and their salts, T., 2070.
two isomeric chlorotetra-acetyl- α -fructoses, A., i, 10.
the crystal forms of some substituted amides of toluene-p-sulphonic acid, A., i, 18.
Röntgenograms obtained by means of mica piles composed of crossed lamellae, A., ii, 234.
- Jaeger, Frans Maurits**, and *B. Kapma*, accurate measurement of the electrical conductivity of electrolytes at temperatures up to 1600°, A., ii, 159.
- Jäger, Otto.** See *Emil Knoevenagel*.
- Jaeger, Wilhelm**, and *Helmut von Steinwehr*, the alleged uselessness of the Weston normal element, A., ii, 372.
- Jänecke, Ernst**, the fusion of potassium salts and mixtures of salts containing water of crystallisation. I and II, A., ii, 94.
ternary systems with three solid phases of a special kind: the systems (Ba-K-Na)Cl, Mg-Cl-Zn and similar cases, A., ii, 95.
the system, barium chloride-potassium chloride-sodium chloride, A., ii, 8.
mixed crystals (K,Na)Cl in ternary systems, A., ii, 96.
the melting and boiling points of ammonium sulphate, A., ii, 697.
- Järvinen, K. K.**, molecular attraction V., A., ii, 167.
equation of condition for liquids, A., ii, 375.

- Jaeschke, Walter. See Ernst Koenigs.
 Jaffoux, Pierre. See Marcel Delépine.
 Jahn, Gerhard, supersaturated solid solutions in mixtures of wax-colophony, A., i, 427.
 James, R. W., the crystalline structure of bismuth, A., ii, 513.
 James, R. W. See also W. Lawrence Bragg.
 Jameson, Alexander Pringle, and William Ringrose Gelston Atkins, physiology of the silkworm, A., i, 638.
 Jameson, George Samuel, Walter F. Baughman, and Dirk Hendrik Brauns, the chemical composition of peanut oil, A., i, 840.
 Jamieson, George Samuel. See also Walter F. Baughman.
 Jancke, Willi. See R. Becker, and Reginald Oliver Herzog.
 Jander, Gerhart, and Hans Caesar Stühlmann, chemical analysis with membrane filters. II. Volumetric estimation of zinc, A., ii, 711.
 Janet, (Mlle.) Marthe Paul. See W. Mestrezat.
 Jans, L. C., halogenated nitrobenzaldehydes and halogenated indigotins, A., i, 458.
 Jantzen, Ernst. See Paul Rabe.
 Jaquerod, Adrien, and Ch. Borel, variations of density of atmospheric air, A., ii, 635.
 Jaschinowski, K. See Alfred Wohl.
 Jasoy, H. See Adolf Sieglitz.
 Jauch, Karl, specific heat of aqueous salt solutions, A., ii, 375.
 Jeantet, P. See J. Duclaux.
 Jeffery, F. H., the electrolysis of solutions of sodium nitrite, using a copper anode, A., ii, 374.
 Jencks, Zulia, carbohydrates of the root of the cat-tail (*Typha latifolia*), A., i, 913.
 Jenisch, W. See Erich Tiede.
 Jenkin, C. Frewen, and D. N. Shortkoss, total heat of liquid carbon dioxides, A., ii, 485.
 Jenkins, William Job, interaction of acetylene and mercuric chloride. II, T., 747.
 Jenks, Clarence A. See Joel H. Hildebrand.
 Jilek, Ant., titrations with potassium permanganate, A., ii, 712.
 Jirsa, Fr., relationships at copper anodes in solutions of alkali hydroxides, A., ii, 298.
 Joachimoglu, Georg, comparison of the actions of *d*-, *l*-, and *i*-camphor. IV. The action on the plain muscle of the leech, A., i, 146.
 Joetten, K. W. See L. Haendel.
 Joffé, Ch. L. See Israel Lifschitz.
 Joffe, J., and Edouard Palmer Poulton, partition of carbon dioxide between plasma and corpuscles in oxygenated and reduced blood, A., i, 141.
 Johns, Carl Oscar, and C. E. F. Gersdorff, the globulin of the cologne nut, *Attalea culicaria*, A., i, 212.
 Johns, Carl Oscar, and David Breese Jones, some amino-acids from the globulin of the coconut as determined by the butyl alcohol extraction method of Dakin, A., i, 65.
 Johns, Carl Oscar, and Henry C. Waterman, some proteins from the mung bean, *Phaseolus aureus*, Roxburgh, A., i, 84.
 Johns, Carl Oscar. See also David Breese Jones.
 Johnson, Erling B., direct method for the estimation of dicyanodiamide, A., ii, 168.
 Johnson, Mary, dyes of the pyrazolone series, A., i, 690.
 Johnson, Ruth. See Walter H. Eddy.
 Johnson, Treat Baldwin, and Elmer B. Brown, catalysis. I. Reduction of ureal to hydroureacil, A., i, 806.
 Johnson, Treat Baldwin, and Frederick W. Lane, the preparation of some alkyl derivatives of resorcinol and the relation of their structure to antiseptic properties, A., i, 340.
 Johnson, Treat Baldwin, and Louis A. Mikeska, pyrimidines. LXXXIX. The condensation of benzamidine with ethyl γ -diethoxyacetacetate, A., i, 57.
 Johnston, Elmer H. See Furlington Daniels.
 Jolibois, Pierre, Robert Bossuet, and Chevy, fractional precipitation, A., ii, 264.
 Jolibois, Pierre, and Bouvier, the reversibility of the reaction $\text{CaCO}_3 = \text{CO}_2 + \text{CaO}$, A., ii, 438.
 Jolles, Adolf, detection of very small quantities of indican (potassium indoxyl sulphate) in water as an aid to hygienic water analysis, A., ii, 69.
 Jonas, K. G., the origin and chemical structure of coal, A., ii, 554.
 Jones, A. J., detection and estimation of minute quantities of bromide in saline residues, and in a mixture of the halogens, A., ii, 516.
 Jones, David Breese, and Carl Oscar Johns, hydrolysis of the globulin of the coconut, *Cocos nucifera*, A., i, 66.

- Jones, David Breese, and Henry C. Waterman, the basic amino-acids of glycinin, the globulin of the soy bean, *Soja hispida*, as determined by van Slyke's method, A., i, 521.
- Jones, David Breese. See also Carl Oscar Johns.
- Jones, F. R., and W. B. Tisdale, the effect of soil temperature on the development of nodules on the roots of certain legumes, A., i, 914.
- Jones, Frank Raymond. See Gilbert Thomas Morgan.
- Jones, Grinnel, and Walter Cecil Schumb, potential of the thallium electrode and the free energy of formation of thallous iodide, A., ii, 676.
- Jones, J. Shirley, and D. E. Bullis, manganese in commonly grown legumes, A., i, 840.
- Jones, Leslie Amiel. See Gilbert Thomas Morgan.
- Jones, Linus H., and John W. Shive, effect of ammonium sulphate on plants in nutrient solutions supplied with ferric phosphate and ferrous sulphate as sources of iron, A., i, 838.
- Jones, Martha R., and Lillian L. Nye, distribution of calcium and phosphoric acid in the blood of normal children, A., i, 763.
- Jonesco, Stan, the physiological role of the anthocyanins, A., i, 643.
the existence of anthocyanidins in the free state in the fruits of *Ruscus aculeatus* and *Solanum dulcamara*, A., i, 760.
- Jorissen, Willem Paulinus, oxidation pressure limits. II. The pressure limit of autoxidation considered as a particular case of the inferior limit of explosion, A., ii, 99.
the existence of compounds in liquid mixtures, A., ii, 386.
the limiting pressure of autoxidation, A., ii, 688.
- Junk, H. See Emil Ramann.
- Justin-Mueller, Ed., differentiation of the extract of yellow wood (morin) and the extract of quercitron (quercitrin), A., ii, 69.
examination of urine containing pentoses, A., ii, 416.
- K.
- Kaden, H. See Aladar Skita.
- Kadlcová. (Mlle.) H., the empirical formula of Walden and the theory of Ghosh, A., ii, 680.
- Kahlenberg, Louis, and George J. Ritter, catalytic hydrogenation of cottonseed oil, A., i, 302.
- Kahn, M., and L. G. Hadjopoulos, estimation of calcium in blood, A., ii, 558.
- Kalb, Ludwig, arsanthrene (diphenylenediarsine), A., i, 375.
- Kameyama, Naoto, calcium cyanamide, A., i, 14.
the graphitic nature of the carbon of nitro-lime, A., ii, 697.
- Kamio, Masumi. See Hitekichi Yanagisawa.
- Kananow, Georg. See Jakob Meisenheimer.
- Kanda, Sakyō, bioluminescence. III. The production of light by *Luciola vitticollis* is an oxidation process, A., i, 77.
bioluminescence. IV. The nature of the luciferase of *Cypridina hilgardii*, A., i, 530.
- Kandell, M. See Joaquín Enrique Zanetti.
- Kanō, Naokuna, estimation of cyanides iodometrically with the aid of benzene, A., ii, 718.
- Kapma, B. See Frans Maurits Jaeger.
- Kariyone, Tatsuo, and Yashiro Kimura, estimation of santonin in wormseeds, A., ii, 223.
- Karr, Walter G., metabolism studies with diets deficient in water-soluble vitamin-B, A., i, 75.
some effects of water-soluble vitamin on nutrition, A., i, 75.
- Karr, Walter G. [with Edvard Tolsto], comparative metabolism of proteins of unlike composition, A., i, 475.
- Karrer, P., constitution of starch and glycogen, A., i, 707.
polysaccharides. XI. Compounds of anhydro-sugars with alkali hydroxides; a method of determining the parent compound of polymeric anhydro-sugars, A., i, 765.
chelerythrine, A., i, 801.
- Karrer, P., Rosa Baumgarten, S. Günther, W. Harder, and Lina Lang, glucosides. IX., A., i, 260.
- Karrer, P., and J. Ferla, hydroxycarbinol compounds. V. Products of the action of cyanogen and hydrogen chloride on resorcinol and orcinol, A., i, 341.
- Karrer, P., and O. Hurwitz, constitution of the sugar-acetones, A., i, 767.
- Karrer, P., Walter Karrer, and J. C. Chao, glucosides. VIII. Glycyrrhizin, A., i, 259.

- Karrer, *P.*, *Walter Karrer*, *H. Thomann*, *E. Horlacher*, and *W. Mäder*, preparation of amino-alcohols and choline from natural amino-acids, *A.*, i, 228.
- Karrer, *P.*, and *Lina Lang*, polysaccharides. V. Methylation of inulin, *A.* i, 312.
- Karrer, *P.*, and *C. Nägeli*, polysaccharides. II. Constitution of di-amylose, *A.*, i, 310.
- Karrer, *P.*, polysaccharides. IV. Degradation of potato starch, *A.*, i, 311.
- Karrer, *P.*, polysaccharides. VI. Constitution of starch and glycogen, *A.*, i, 313.
- Karrer, *P.*, *C. Nägeli*, *O. Hurwitz*, and *A. Walti*, polysaccharides. VIII. Starch and the amyloses, *A.*, i, 768.
- Karrer, *P.*, and *S. Rosenfeld*, hydroxycarbonyl compounds. VI. Phloroglucinol and resorcinol ketones, *A.*, i, 793.
- Karrer, *P.*, *A. Büdinger*, *A. Glattfelder*, and *L. Waltz*, syntheses in the bergapten group and of other hydroxycoumarone derivatives, *A.*, i, 800.
- Karrer, *P.*, and *Alexander P. Smirnov*, a new method for the preparation of anhydro-sugars, *A.*, i, 766.
- Karrer, *P.*, and *Fr. Widmer*, polysaccharides. III. Cellulose, *A.*, i, 310.
- Karrer, *P.*, polysaccharides. VII. Constitution of cellobiose, *A.*, i, 397.
- Karrer, *P.*, polysaccharides. IX. Cellulose and lignin, *A.*, i, 771.
- Karrer, *P.*, *Fr. Widmer*, and *Alexander P. Smirnov*, polysaccharides. X. Anhydro-sugars of the trehalose type: diglucan and isodiglucan, *A.*, i, 765.
- Karrer, *Walter*. See *P. Karrer* and *Alfred Werner*.
- Karszen, *A.* See *N. H. Kolkmeijer*.
- Karvé, *D. D.*, and *John Joseph Sudborough*, additive compounds of m-dinitrobenzene, *A.*, i, 657.
- Karvé, *D. D.* See also *John Joseph Sudborough*.
- Karwal, *Ernst*. See *Bernhard Neumann*.
- Kát, *Violen*. See *Antonia Némec*.
- Katsch, *Gerhard*, alcapton and acetone. II., *A.* i, 383.
- Kaufmann, *Hugo*, combined auxochromes, *A.*, i, 422.
- Kaufmann, *C. E.* See *A. M. Hjort*.
- Kauko, *Yrjö*, hydrolysis of cellulose, *A.*, i, 771.
- Kaupp, *M.* See *R. Glocker*.
- Kautsky, *Hans*, some unsaturated silicon compounds, *A.*, ii, 505.
- Kawase, *Sjôirô*, *Keiji Suda*, and *Akira Fukuzawa*, chrysalis oil, *A.*, i, 699.
- Kawase, *Sjôirô*, *Keiji Suda*, and *Kakuji Saitô*, the blood of the silk-worm, *A.*, i, 379.
- Kawase, *Sjôirô*, the digestive enzymes of the silk-worm, *A.*, i, 381.
- Kayser, *E.*, influence of luminous radiations on a nitrogen-fixing organism, *A.*, i, 79.
- Kayser, *E.*, influence of luminous radiations on *Azotobacter*, *A.*, i, 298, 291.
- Kayser, *E.*, influence of uranium salts on a nitrogen-fixing organism, *A.*, i, 479.
- Kayser, *E.*, influence of the nitrogenous material elaborated by *Azotobacter* on the alcoholic ferment, *A.*, i, 642.
- Keesom, *W. H.*, the quadrupolar moments of the oxygen and nitrogen molecules, *A.*, ii, 327.
- Keeton, *R. W.* See *Fred C. Koch*.
- Keffler, *Leon Pierre George*, some derivatives of anthraquinone-imide, *T.*, 1476.
- Kehrmann, *Friedrich* (constitution of pyronine, of salts of azo-compounds, and of pyrylium salts), *A.*, i, 447.
- Kehrmann, *Friedrich*, constitution and colour. VII. Theory of quinonoid organic onium salts, *A.*, ii, 476.
- Kehrmann, *Friedrich*, and *Takis C. Christopoulos*, azthionium salts of the naphthalene series, *A.*, i, 449.
- Kehrmann, *Friedrich*, and *Iwan Effront*, salt-like additive products of the carbon double bond with acids, *A.*, i, 348.
- Kehrmann, *Friedrich*, nitro-derivatives of phenazonium, *A.*, i, 601.
- Kehrmann, *Friedrich*, and *Henri Goldstein*, absorption spectra of certain nitro-derivatives of carbazine, phenoxazine, and thiodiphenylamine, *A.*, i, 271.
- Kehrmann, *Friedrich*, and *Marie Ramm*, 4-nitrophenazoxine, *A.*, i, 123.
- Kehrmann, *Friedrich*, *Marie Ramm*, and *Ch. Schmajewski*, coloured derivatives of tetraphenylmethane. III. New synthesis of carbazine [dihydroacridine] dyes, *A.*, i, 600.
- Kehrmann, *Friedrich*, and *Maurice Sandoz*, determination of the constitution of coloured substances from their absorption spectra, *A.*, i, 276.
- Keijzer, *J.* See *L. M. Koltzoff*.
- Keilholz, *A.*, detection of some metals and of arsenic in plant and human organs, *A.*, ii, 793.

- Kelber, C.**, catalytic hydrogenation of organic compounds with common metals at the temperature of the laboratory; the activity of nickel catalysts prepared at different temperatures; influence of oxygen on the nickel catalyst. IV., A., ii, 630.
- catalytic hydrogenation of organic compounds by base metals at the atmospheric temperature. V. Influence of the nature and position of the halogens in organic haloid compounds on the removal of halogen by catalytic hydrogenation, A., ii, 688.
- Keller, Emil**, dielectric constants of biochemical substances, A., i, 476.
- determination of the colloid charge, A., ii, 14.
- dielectric constants of colloidal solutions, A., ii, 682.
- Kelley, Walter Pearson**, and **S. M. Brown**, solubility of anions in alkali soils, A., i, 915.
- Kelley, Walter Pearson**, and **A. B. Cummins**, chemical effect of salts on soils, A., i, 338.
- Kemble, Edwin C.**, probable normal state of the helium atom, A., ii, 478.
- helium and hydrogen models, A., ii, 632.
- Kemp, Nikolaus**, the reaction of potassium ammonium nitrate with soil, A., i, 915.
- Kendall, E. C.** See **A. E. Osterberg**.
- Kendall, James**, molecular state of water vapour, A., ii, 106.
- correlation of compound formation, ionisation, and solubility in solutions; outline of a modified ionisation theory, A., ii, 491.
- Kendall, James**, and **Arthur W. Davidson**, melting point of ammonium sulphate, A., ii, 334.
- formation of compounds and solubility in systems of the type, sulphuric acid-metal sulphate, A., ii, 453.
- Kendall, James**, and **Mary Louise Landon**, the formation of additive compounds between 100 % sulphuric acid and the normal sulphates of the alkali metals, A., ii, 45.
- Kendall, James**, and **Kenneth Potter Monroe**, viscosity of liquids. V. The ideality of the system, benzene-benzyl benzoate and the validity of the Bingham fluidity formula, A., ii, 241.
- Kennaway, Ernest Laurence**, method for the estimation of urea by soja-bean, A., ii, 70.
- Kennaway, Ernest Laurence**. See also **H. W. Davie**.
- Kennedy, Cornelia**. See **Leroy S. Palmer**.
- Kenner, James**, and **Wilfrid Victor Stubbings**, a second form of 6:6'-dinitrodiphenic acid, and its conversion into new cyclic systems, T., 593.
- Kenner, James**, and **Ernest Witham**, the influence of nitro-groups on the reactivity of substituents in the benzene nucleus. IV. The condensation of ethyl 3- and 5-nitro-2-chlorobenzoates with hydrazines, T., 1053.
- the influence of steric factors on intra molecular condensation, T., 1452.
- Kenner, James**. See also **Harold Burton**.
- Kercher, Franz**. See **Kurt Brand**.
- Kerl, W.** See **W. Hausmann**.
- Kermack, William Ogilvy**, **William Henry Perkin, jun.**, and **Robert Robinson**, harmine and harmaline. V. The synthesis of norharman, T., 1602.
- Kern, Ervin J.** See **John Arthur Wilson**.
- Kessler, H. G.** See **Friedrich Meyer**.
- Keys, David A.**, a piezoelectric method of measuring explosion pressures, A., ii, 628.
- Kharasch, Morris S.**, 5-iodo-3-nitro-4-hydroxybenzoic acid and the mercury derivative of *m*-nitro-*p*-hydroxyphenylcarbinol, A., i, 510.
- Kharasch, Morris S.**, and **Lyman Chalkley, jun.**, mercuri-organic derivatives. II. Nitrobenzene mercury compounds; an indirect method of mercurising organic compounds, A., i, 377.
- Kharasch, Morris S.** See also **Julius Stieglitz**.
- Khorozian, Krikor G.** See **Elbert W. Rockwood**.
- Kiefer, F.** See **Walther Diltz**.
- Kieiss, C. C.**, and **W. F. Meggers**, wavelengths longer than 5500 Å. in the arc spectra of seven elements, A., ii, 4.
- Kiesling, Werner**, comparative experiments on the action of some chlorine derivatives of methane, ethane, and ethylene on isolated frog's heart, A., i, 382.
- Kiliani, Heinrich**, new observation on the chemistry of the sugars. I, A., i, 304.
- Kimball, J. Willard**, **Richard L. Kramer**, and **Ebenzer Emmet Reid**, the iodometric estimation of mercaptans, A., ii, 464.
- Kimura, Kenjiro**. See **Yûji Shibata**.

- Imura, Masamichi**, the spectrum of bromine. I. Line and band spectra, lines of arc and spark types, and the relations between the lines, A., ii, 140.
- the spectrum of bromine. II. Line structures and the Zeeman effect, A., ii, 141.
- the distribution of charged ions in the path of an electric discharge through a tube containing bromine vapour, A., ii, 141.
- arc and spark lines of iodine, A., ii, 142.
- figures produced by crystallisation of potassium dichromate, A., ii, 200.
- Kimura, Masamichi**, and **Mitsuharu Fukuda**, spectrum of chlorine. I. Emission and absorption spectra, A., ii, 140.
- spectrum of chlorine. II. The influence of magnetic fields on spectral lines of chlorine, A., ii, 140.
- Kimura, Fashiro**. See **Tatsuo Kariyone**.
- Kinch, Edward**, obituary notice of, T., 2123.
- Kinder, H.**, estimation of phosphorus in iron, steel, ores, and slags, A., ii, 594.
- Kindler, Karl**, preparation of glyoxal by the action of acetylene on gold chloride or bromide, A., i, 396.
- Kindler, Karl**, and **Walter Dehn**, thioamides. II. Reduction of thioamides to primary amines, A., i, 510.
- Kindler, Karl**, and **Friedrich Finndorf**, thioamides. I. Preparation of thioamides with the aid of aluminium sulphide, A., i, 509.
- King, Arthur S.**, intensity differences in furnace and arc among the component series in band spectra, A., ii, 610.
- the variation with temperature of the electric-furnace spectrum of manganese, A., ii, 612.
- King, Charles G.** See **Alexander Lowy**.
- King, Harold**, derivatives of sulphur in commercial salvarsan. I. and II., T., 1107, 1415.
- King, Harold**. See also **Hugh William Acton**, and **Robert George Farghar**.
- King, Joseph Edgar**. See **Abu Mohamed Bakr**.
- King, J. Fitch**, density of hydrochloric acid, A., ii, 326.
- King (Miss) Ruth**, production of picric acid from the sulphonic acids of phenol, T., 2105.
- Kingsbury, Francis B.**, and **W. W. Swanson**, rapid method for the estimation of hippuric acid in urine, A., ii, 662.
- Kinkead, R. W.**, the new indicator, A., ii, 124.
- Kinne, Georg**. See **Ernst Koenigs**.
- Kipping, Frederick Stanley**, organic derivatives of silicon. XXIV. *di*-Derivatives of silicoethane, T., 647.
- Kipping, Frederick Stanley**, and **James Edwin Sands**, organic derivatives of silicon. XXV. Saturated and unsaturated silicohydrocarbons, Si_4Ph_8 , T., 830.
- organic derivatives of silicon. XXVI. Piperidine as an analytical reagent, T., 848.
- Kircher, A.**, and **F. von Ruppert**, estimation of arsenic in neosalvarsan (salvarsan, etc.), A., ii, 130.
- Kirchhof, F.**, action of concentrated sulphuric acid on natural and artificial varieties of caoutchouc, A., i, 116.
- periodic system of the elements from the point of view of the theory of radioactive disintegration, A., ii, 103.
- antimony pentasulphide (sulphur auratum), A., ii, 206.
- Kirn, Max**, dispersion of hydrogen in the ultra-violet, A., ii, 285.
- Kirsch, Gerhard**, radioactive facts and nuclear structure, A., ii, 150.
- structure of some compounds, A., ii, 193.
- Kirschbaum, Georg**. See **Julius von Braun**.
- Kittl, Th.** See **Ludwig Moser**.
- Kjelsberg, F.** See **Hermann Staudinger**.
- Klänhardt, F.** See **Adolf Windaus**.
- Klason, Peter**, the cellulose content of spruce wood, A., i, 840.
- iodometric estimation of copper, A., ii, 133.
- Klauber, Albert**, titanium hydride, A., ii, 513.
- Klauber, Albert**, and **Julius Mell von Mellenheim**, the existence of a gaseous hydride of thorium, A., ii, 206.
- Klein, Oskar**, and **S. Rosseland**, collisions between atoms and free electrons, A., ii, 291.
- Klein, Oskar**, and **Olof Svanberg**, freezing points of binary aqueous solutions of electrolytes, A., ii, 375.
- Klein, Paul**, precipitation of colloids by non-electrolytes, A., ii, 684.
- Klein, Paul**. See also **Isidor Traube**.
- Klein, Richard**. See **Emil Fromm**.
- Kleinmann, Hans**, a new nephelometer and the principles of nephelometric measurements, A., ii, 56.
- Klemenc, Alfons**, the behaviour of an unattacking electrode in the reaction $3\text{HNO}_3 \rightleftharpoons 2\text{NO} + \text{HNO}_2 + \text{H}_2\text{O}$ at equilibrium, A., ii, 297.
- negative hydrogen ions, A., ii, 692.

- Klemenc, Alfons**, and **Friedrich Pollak**, the oxidation of arsenious acid by nitric acid in presence of mercuric ions; the change of a negative catalyst to a positive, A., ii, 442.
- Klemp, G.**, and **J. von Gyulay**, colloidal arsenates. II. Cadmium arsenate jellies, A., ii, 507.
- Klencke, H.** See **T. Schmiedel**.
- Klett, Robert E.** See **Philip Adolf Kober**.
- Kletzl, E. A.** See **Kurt Hess**.
- Klever, Helmut Wilhelm.** See **Hermann Staudinger**.
- Kling, André**, and **Daniel Florentin**, properties and constitution of the group (O·CCl₃), A., i, 90.
- Klinger, R.** See **E. Herzfeld**.
- Klooster, H. S. van**, nitroso-R-salt; a new reagent for the detection of cobalt, A., ii, 415.
- Knaff-Lenz, Erich von**, simple method of preparing ultra-filters, A., ii, 93. gold sols, A., ii, 342.
- Knaggs, (Miss) Isabel Ellie**, and **Richard Henry Vernon**, organic derivatives of tellurium. III. Crystallographic and pharmacological comparison of the α - and β -dimethyltelluronium dihaloids, T., 105.
- Knappe, E.**, the extraction of tannin (gallotannic acid), A., i, 353.
- Knebel, E.** See **Robert Stollé**.
- Knibbs, Norman Victor Sydney**, and **H. Palfreeman**, the theory of electrochemical chlorate and perchlorate formation, A., ii, 396.
- Knuipping, P.** See **J. Franck**.
- Knoch, Frieda.** See **Johannes Gadamer**.
- Knöpfer, Gustav**, action of hydrazine on chloral hydrate, A., i, 158.
- Knoevenagel, Emil** [with **Otto Jäger**], keto-anils. I. Preparation of aliphatic keto-anils and fission of keto-anil alkylidides by alkali, A., i, 785.
- Knoevenagel, Emil**, and **Albert Bregenz**, nature of the swelling process. III., A., i, 709.
- nature of the swelling process. IV. Swelling and internal friction in the system, cellulose acetate-nitrobenzene-alcohol, A., i, 710.
- nature of the swelling process. V. Swelling and partition in the system, nitrobenzene-alcohol-cellulose acetate, A., i, 771.
- Knoevenagel, Emil**, and **Otto Eberstadt**, nature of the swelling process. I., A., i, 402.
- Knoevenagel, Emil**, and **Robert Motz**, nature of the swelling process. II., A., i, 709.
- Knoevenagel, Emil**, and **G. Oelbermann**, citral series; optical determination of the constitution of compounds of the citral series, A., i, 885.
- Knowles, Chester L.**, the preparation of *p*-diphenylpropionic acid; and new reactions of diphenyl and its derivatives, A., i, 417.
- Knudson, Arthur**, relationship between cholesterol and cholesterol esters in the blood during their absorption, A., i, 474.
- Kobayashi, Kiichirô**, formation of petroleum from fish oils; origin of Japanese petroleum, A., i, 297.
- Kobel, Maria.** See **Heinrich Biltz**.
- Kober, Philip Adolph**, and **Robert E. Klett**, further improvements in the nephelometer-colorimeter, A., ii, 555.
- Koch, Fred C.**, **Arno B. Luckhart**, and **R. W. Keeton**, gastrin. V. The chemical investigation of substances present in gastrin, A., i, 74.
- Koch, Peter Paul.** See **Walther Ehlers**.
- Kochmann, M.** [with **C. Lucanus** and **R. Mulhaupt**], the magnesium-calcium and the barium-sulphate antagonism, A., i, 147.
- Kodama, Shintarô**, odorous constituents of apples; esters derived from leucic acid, A., i, 220.
- the thiocarbimide reaction. I., A., i, 237.
- Kögel, P. R.**, primary effect of light and photochemical valency, A., ii, 289.
- Köhler, Arnold.** See **Wilhelm Schneider**.
- Köhler, Erich**, physiology of the yeast cell, A., i, 81.
- course of alcoholic fermentation by yeast. II., A., i, 81.
- enzyme formation, A., i, 150.
- Köhler, K.** See **W. König**.
- Köhler, Ludwig.** See **Kurt Brass**.
- Köller, Carola**, volume changes of tin amalgams, A., ii, 341.
- Koelsch, H.**, estimation of nickel and copper on nickel-plated or copper-plated iron articles, A., ii, 597.
- König, W.**, and **K. Köhler**, aromatic acylamines as azo-components, A., i, 459.
- König, W.**, and **O. Treichel**, constitution of the cyanines, A., i, 738.
- Koenigs, Ernst**, and **Walter Jaeschke**, synthesis of 4-alkylpyridines, A., i, 598.
- Koenigs, Ernst**, and **Georg Kiene**, 4-pyridyl mercaptan and pyridine-4-sulphonic acid, A., i, 594.
- Koenigs, Ernst**, and **Walter Ottmann**, partial synthesis of homocineolepnone and certain cyclopentanetricone derivatives, A., i, 595.

- Koenigsberger, Johann Georg, and Wolf Johannes Müller**, synthetic silicate minerals, A., ii, 459.
- Köpcke, (Frl.) Paula.** See *Eugen Bamberger*.
- Koers, C. H.** See *J. C. van der Harst*.
- Kohn, Wilhelm**, apparatus for the estimation of carbon dioxide (in carbonates), A., ii, 710.
- Köhler, Bohdan**, iodometric studies. I. The estimation of iodine by titration with sodium thiosulphate, A., ii, 410.
- Köhler, (Mlle.) Denise**, variation of organic acids in the course of anthogenic pigmentation, A., i, 484.
- Kohlshütter, Volkmar, and A. Frumkin**, decomposition of hydrocarbons by canal rays, A., i, 405.
- Kohlshütter, Volkmar, and A. Nägeli**, topochemical reactions; formation of carbon at contact substances, A., ii, 258.
- Kohlshütter, Volkmar, and H. Stäger**, electrode reactions; contractometric observations at anodes, A., ii, 619.
- Kohlweiler, Emil**, formation of elements and structure of the atomic nucleus, A., ii, 689.
- Kohn, Adolf.** See *Emil Fromm*.
- Kohn, H.**, heat of sublimation of carbon, A., ii, 302.
- Kohn-Abrest, Émile**, general method for the detection and estimation of arsenic, A., ii, 130.
- Kolhörster, Werner**, the enumeration and range of the recoil atoms of thorium-C and thorium-C', A., ii, 149.
- Kolkmeijer, N. H., J. M. Bijvoet, and A. Karssen**, investigation by means of X-rays of the crystal structure of sodium chlorate and sodium bromate, A., ii, 200.
- Kolkwitz, R.**, pressure developed by alcoholic fermentation, A., i, 757.
- Koller, microchemical reaction of morphine**, A., ii, 71.
- Koller, Paul**, dolomite from Binn, Switzerland, A., ii, 701.
- Kollo, Constantin**, new process for the separation and estimation of iron and manganese, A., ii, 218.
- Kollo, Constantin, and O. Lascar**, estimation of formaldehyde, A., ii, 526.
- Kollo, Constantin, and (Mlle.) Virginie Teodossin**, microchemical identification of gaseous ammonia as hexamethylenetetramine picrate, A., ii, 214.
- Kollo, Constantin.** See also *Stefan Minovici*.
- Kolosovsky, Nicolas de**, the phenomenon of partition, A., ii, 440.
- Kolsborn, Erich**, preparation of derivatives of *p*-aminophenol and of its *O*-alkyl ethers, A., i, 413.
- Kolthoff, I. M.**, the importance of adsorption in analytical chemistry, A., ii, 19.
- indication of the acid and basic functions and their estimation, A., ii, 55.
- the titration of potassium iodide with mercuric chloride, A., ii, 57.
- the calculation and estimation of active carbonic acid in drinking water, A., ii, 59.
- the volumetric estimation of barium and strontium as chromates, A., ii, 62.
- the separation of barium, strontium, and calcium by the chromate method, A., ii, 63.
- titration of lead as lead chromate, A., ii, 64.
- the importance of adsorption in analytical chemistry. III. The adsorption of acid by filter paper, A., ii, 123.
- the application of conductivity titrations in analysis, A., ii, 124.
- the importance of adsorption in analytical chemistry. IV. The adsorption of alkalis by cellulose. V. The adsorption of salts of the alkali and alkaline earth metals and of alkaloids by filter paper, A., ii, 213.
- iodometric estimation of chromic acid, A., ii, 219.
- importance of adsorption in analytical chemistry. VI. Adsorption of lead and copper by filter-paper, A., ii, 276.
- the importance of adsorption in analytical chemistry. VII. The adsorption of silver, mercury, and other metals, A., ii, 277.
- the importance of adsorption in analytical chemistry. VIII. The adsorption of asbestos, A., ii, 314.
- the estimation of the adsorbing power of charcoal, A., ii, 333.
- the importance of adsorption in analytical chemistry. IX. Glasswool as a filter material, A., ii, 409.
- estimation of the hydrogen-ion concentration of potable water, A., ii, 409.
- iodometric estimation of arsenic acid, A., ii, 463.
- the estimation of bases combined with weak or moderately strong acids and of very weak bases with acids and vice versa, A., ii, 465.

- Kolthoff, I. M.**, bromometric estimation of salicylic acid, A., ii, 466.
determination of hydrogen-ion concentration by means of indicator papers, A., ii, 515.
titration of bases combined with weak acids, and of very weak bases with acids, and vice versa, A., ii, 516.
argentometric titration of iodides, A., ii, 517.
estimation of the hydrogen-ion concentration in water by a colorimetric method, A., ii, 555.
the potentiometric titration of iodides by means of permanganate, A., ii, 555.
a simple method for the preparation of sodium hydroxide solution free from carbonate, A., ii, 703.
the acidimetric estimation of ammonium salts with formalin, A., ii, 711.
the iodometric determination of iron, A., ii, 713.
- Kolthoff, I. M.**, and **J. C. van Dijk**, the volumetric estimation of zinc, A., ii, 413.
- Kolthoff, I. M.**, and **J. Keijzer**, the analysis of mercuric chloride, A., ii, 66.
- Kolthoff, I. M.** See also *Nicolaas Schoorl*.
- Kon, George Armand Robert**, the formation and stability of spiro-compounds. IV. Ketones derived from open-chain and cyclic glutaric acids, T., 810.
- Kon, George Armand Robert**, and **Arnold Stevenson**, the formation of derivatives of tetrahydronaphthalene from γ -phenyl fatty acids, T., 87.
- Kon, George Armand Robert**. See also *Stanley Francis Birch*.
- Kondô, Hajime**. See *Hidékichi Yanagisawa*.
- Kondô, Heisaburô**, and **Umetarô Amano**, constituents of the Korean ginseng. III., A., i, 296.
- Kondô, Heisaburô**, and **Shinichi Satô**, constitution of matrine. I., A., i, 882.
- Kondô, Kinsuke**, constituents of *Pelretia Wrightii*, A., i, 387, 840.
- Konno, Kosuke**, metallographic investigation of the system, antimony sulphide-silver sulphide, A., ii, 206.
- Konno, Seiei**, determination of the electrical resistance of alloys of lead-tin and lead-zinc at high temperatures, A., ii, 425.
- Konowalowa, A. A.** See *Alexei E. Tschitschibabin*.
- Konowalowa, R. A.** See *Alexei E. Tschitschibabin*.
- Konrad, Erick**. See *Robert Schwarz*.
- Korczyński, Antoine**, the catalytic action of certain metallic salts in reactions of organic compounds, A., ii, 445.
- Korczyński, Antoine**, and **W. Mroziński**, the catalysts in the reaction between carbon monoxide, hydrogen chloride, and aromatic hydrocarbons, A., i, 567.
- Korczyński, Antoine**, and **S. Piasecki**, reduction of certain aromatic nitro-compounds by ammonium sulphide, A., i, 517.
- Korevaar, A.**, chemical affinity, A., ii, 440.
- Kornfeld, Gertrud**, decomposition of hydrogen peroxide in ultra-violet light, A., ii, 670.
- Kossel, Walther**, the development of the Röntgen spectral series with increasing atomic number, A., ii, 138.
- Kostychev, S.**, the formation of sugar by moulds from substances which are not sugars, A., i, 83.
- Kostychev, S.**, and **Paul Eliasberg**, the character of the potassium compounds in living plant tissue, A., i, 83.
alcoholic fermentation. X. Fermentation is life without oxygen, A., i, 150.
- Kostychev, S.**, and **L. Frey**, alcoholic fermentation. VIII. Influence of zinc chloride on the alcoholic fermentation of living and killed yeast, A., i, 149.
- Kostychev, S.**, and **S. Subkova**, alcoholic fermentation. IX. Influence of cadmium and zinc salts on the yeast enzymes, A., i, 149.
- Kostychev, S.**, and **E. Tsvetkova**, the utilisation of nitrates by moulds for the production of nitrogenous compounds, A., i, 83.
- Kotyga, Gertrud**. See *Bernhard Neumann*.
- Kozawa, Shuzo**, and **Nobu Miyamoto**, permeability of the red corpuscles for amino-acids, A., i, 474.
- Kozlowski, Antoine**, the saponarin in *Matron cuspidatum*, A., i, 840.
- Krämer, Felix**. See *Arthur Hantsch*.
- Kramer, Benjamin**, and *Frederick F. Tisdall*, clinical method for the quantitative estimation of potassium in small amounts of serum, A., ii, 412.
a simple method for the direct estimation of sodium in small amounts of serum, A., ii, 463.

- Kramer, Benjamin** and **Frederick F. Tisdall**, simple technique for the estimation of calcium and magnesium in small amounts of serum, A., ii, 595.
- Kramer, Benjamin**. See also **Frederick F. Tisdall**.
- Kramer, Richard L.**, and **Ebenzer Eumet Reid**, the catalytic preparation of mercaptans, A., i, 359.
- Kramer, Richard L.** See also **J. Willard Kimball**.
- Kramers, H. A.**, influence of an electrical field on the fine structure of the hydrogen lines, A., ii, 139.
- Krasinska, Zofia**. See **Jakob K. Parnas**.
- Kratzer, A.**, spectroscopic confirmation of the isotopes of chlorine, A., ii, 140, 361.
- ultra-red rotation spectra of the hydrogen haloids, A., ii, 142.
- Kraus, Charles August**, solutions of metals in non-metallic solvents. VI. The conductivity of the alkali metals in liquid ammonia, A., ii, 370.
- Kraus, Erich**, the action of unimolecular formaldehyde on Grignard's compounds, A., i, 647.
- Kraus, Erich** [with **G. S. Reissaus**], lead triaryl, a parallel to triphenylmethyl. II. Lead tricyclohexyl, A., i, 825.
- Kraus, P.**, hexachlororuthenates [ruthenichlorides], A., ii, 514.
- Kraus, F.**, and **H. Tampke**, simultaneous detection of tartaric acid, oxalic acid, and formic acid by resorcinol and sulphuric acid, A., ii, 460.
- Kreidl, I.** See **Walter Herzog**.
- Kreis, Hans**, and **Josef Studinger**, the calcium content of egg-white, A., i, 595.
- Kreitmann, Louis**. See **Auguste Rilliet**.
- Kremann, Robert**, electromotive properties of certain binary alloys. I. Theoretical considerations, A., ii, 10.
- Kremann, Robert**, and **Julius Fritsch**, influence of substitution in the components on equilibria in binary solutions. XXX. The binary systems of diphenylmethane with phenols and amines, A., i, 662.
- Kremann, Robert**, **Julius Fritsch**, and **Richard Liebl**, the electromotive behaviour of some binary alloys. XVI. Alloys of bismuth with sodium and potassium, A., ii, 342.
- Kremann, Robert**, and **Julius Gmachl-Pammer**, electromotive properties of certain binary alloys. III. Electromotive behaviour of cadmium-antimony alloys, A., ii, 156.
- Kremann, Robert**, and **Julius Gmachl-Pammer**, electromotive properties of certain binary alloys. V. Electromotive behaviour of tin-sodium alloys, A., ii, 158.
- Kremann, Robert**, and **Heinz Hohl**, influence of substitution in the components on equilibria in binary solutions. XXIX. The binary systems of *m*-aminophenol with amines, A., i, 662.
- Kremann, Robert**, and **Albert Lobinger**, electromotive properties of certain binary alloys. IV. Electromotive behaviour of alloys of thallium with zinc, lead, bismuth, tin, antimony, and cadmium, A., ii, 157.
- Kremann, Robert**, **Egbert Lupfer**, and **Othmar Zawodsky**, influence of substitution in the components on equilibria in binary solutions. XXVII. The binary systems of *m*- and *p*-aminophenol and phenols or nitro-compounds, A., i, 561.
- Kremann, Robert**, and **Ernst Preszfreund**, the electromotive behaviour of some binary alloys. XV. Alloys of potassium with lead, tin, and thallium, and of sodium with antimony, A., ii, 332.
- Kremann, Robert**, and **Helmut Ruderer**, electromotive properties of certain binary alloys. II. Electromotive behaviour of silver-cadmium alloys, A., ii, 11.
- Kremann, Robert**, and **Robert Wittek**, the electromotive behaviour of some binary alloys. XVII. Antimony-selenium alloys and their metallographic investigation, A., ii, 342.
- Kremann, Robert**, and **Othmar Zawodsky**, influence of substitution in the components on equilibria in binary solutions. XXVIII. The binary systems of 2:4-dinitrophenol with the three isomeric phenylenediamines, A., i, 601.
- Kremers, E.**, and **R. Kremers**, chemistry of the heptane solution. II. Revision of the physical constants of heptane, A., i, 705.
- Kremers, E.** See **E. Kremers**.
- Krepelka, Henry**. See **Theodore William Richards**.
- Kretzlow, Alfred**. See **Hans Rupe**.
- Kretzschmann, Hugo**. See **Gustav Heller**.
- Kriebel, Vernon K.**, and **Walter W. Wieland**, the properties of hydroxynitrilase, A., i, 283.
- Krishna, Sri**, phenolcoumarin and resorcinolcoumarin, T., 1420.

- Krishna, Sri**, and **Frank George Pope**, the condensation of *m*-dimethylaminophenol with benzaldehyde, *T.*, 286.
phenolicitraconcin, *T.*, 289.
Kröhnert, Erich. See **Otto Ruff**.
Kroll, S. See **Carl Mannich**.
Kronstein, Abraham, halogen substitution reactions, *A.*, i, 153.
Krüger, Karl. See **Robert Wintgen**.
Krüger, Thea, work of ionisation and dissociation of hydrogen, *A.*, ii, 236.
Kruisheer, C. I. See **Ernst Cohen**.
Kruyt, Hugo Rudolph, low concentrations in colloid chemistry, *A.*, ii, 577.
Kruyt, Hugo Rudolph, and **A. E. van Arkel**, the velocity of flocculation of the selenium sol. I. Flocculation by means of potassium chloride, *A.*, ii, 25.
 the velocity of flocculation of selenium sol. II. Flocculation by means of barium chloride, *A.*, ii, 312.
Kruyt, Hugo Rudolph, and **C. F. van Duin**, heterogeneous catalysis and adsorption, *A.*, ii, 392.
Krzakalla, Hans. See **Heinrich Biltz**.
Kubota, Bonasuke. See **Paul Sabatier**.
Külz, Fritz, colloidal arsenic (and the pharmacological action of yellow arsenic), *A.*, i, 289.
Kürten, H. See **Emil Abderhalden**.
Küster, William, hæmatoporphyrin. *V.*, *A.*, i, 200.
 the prosthetic group of blood pigments. II. The influence of age on the blood pigment, *A.*, i, 203.
 some new observations in the study of bilirubin, *A.*, i, 626.
Kühlmann, Hans. See **Erich Schmidt**.
Kuhn, W. See **Leopold Ruzicka**.
Kulenkampff, Albert. See **Heinrich Wieland**.
Kulp, W. L. See **R. J. Anderson**.
Kumar, Kulikumar. See (*Sir*) **Prabhulata Chandra Rây**.
Kunau, Fritz. See **Wilhelm Schneider**.
Kunz-Krause, Hermann, cause and composition of the insoluble deposits in oil of mustard, *A.*, i, 320.
Kunz-Krause, Hermann, and **Paul Manicke**, elimination of carbon dioxide from organic compounds. IV. Fission of chloral hydrate by mercury acetate, mercury oxide, and certain other metallic oxides, *A.*, i, 543.
Kurtenacker, Albin, the reaction between halogen cyanides and sodium thiosulphate, *A.*, ii, 502.
Kurtenacker, Albin, and **Albert Fritsch**, the action of cyanide on tetrathionate, *A.*, ii, 502.
Kurtenacker, Albin, and **Albert Fritsch**, new method for the estimation of thiosulphate in the presence of sulphite and tetrathionate, *A.*, ii, 556.
Kuss, Ernst. See **Alfred Stock**.
Kutscher, Friedrich. See **Dankwart Ackermann**.
Kypopoulos, S., the detection of parts of different "nobility" in a piece of metal, *A.*, ii, 154.
- L.**
- Laage, E.** See **Richard Stoermer**.
Laar, Johannes Jacobus van, the theoretical determination of the vapour-pressure equation for any substance from the density and coefficient of expansion at a given temperature (below the boiling point). I. Carbon, *A.*, ii, 17.
 critical constants of mercury and increase of molecular attraction on dissociation of double molecules. I. and II., *A.*, ii, 83.
 critical temperature and pressure of some substances, *A.*, ii, 83.
 some relations between absolute critical temperatures of ebullition and fusion, *A.*, ii, 622.
Labbé, H., and **G. de Toni**, methods of estimating calcium in the blood; experimental control of the methods of Jansen and of Marriott and Howland, *A.*, ii, 655.
Labes, Richard, relation between the salting-out and precipitation-inhibiting action of inorganic ions on protein solutions, *A.*, i, 820.
 displacement of the precipitation optimum of serum-albumin by alkaloids, dyes, and other organic electrolytes, and the action of non-electrolytes, *A.*, i, 820.
Labourrassé. See **Paul Pascal**.
Labrouste, Henri, molecular transformations in thin films on the surface of water, *A.*, ii, 18.
Lachman, Arthur, nitrotartaric acid, *A.*, i, 303.
 rapid volumetric method for estimating ethyl alcohol, *A.*, ii, 355.
Lacroix [Antoine François], Alfred, chromohercynite, a new spinellide from Madagascar, *A.*, ii, 53.
Ladenburg, Rudolf, significance of continuous absorption and emission spectra in Bohr's theory, *A.*, ii, 567.
Lämmerhirt, Elisabeth. See **Karl von Auwers**.

- Laer, Marc H. van**, the existence of emulsin and of lipase in malt extract, A., i, 438.
 the products of condensation of carbanide and formaldehyde, A., i, 499.
 the condensation of benzene and chloral hydrate in the presence of aluminium chloride, A., i, 503.
 action of hydrolytic diastases, A., ii, 445.
- Lafitte, P.** See **H. Weiss**.
- Lagatu, H.**, the respective rôle of the three bases, potash, lime, magnesia, in cultivated plants, A., i, 214.
- Laing, (Miss) Mary Evelyn**, the hydration of the fibres of soap curd. III. Sorption of sodium palmitate, T., 1469.
- Laird, J. Stanley**, the chemical potential of phenol in solutions containing salts, and the toxicity of these solutions towards anthrax and *Staphylococcus*, A., i, 151.
 the toxicity of mercuric chloride and its solubility in aqueous alcohol, A., i, 291.
- Laitakari, Aarne**, minerals from the limestone quarries of Pargas, Finland, A., ii, 406.
- Lal, Jivan.** See **Bawa Kartar Singh**.
- Lal, Miri.** See **Bawa Kartar Singh**.
- Lamb, Arthur Beckett, and Gorton R. Fonda**, hydrolysis of dichloro- and hexa-aquo-chromic chlorides, A., ii, 444.
- Lamb, Robert M.** See **John C. Hessler**.
- Lamborne, Herbert.** See **William Hobson Mills**.
- Landé, A.**, dynamics of spatial atomic structure, A., ii, 189.
 size of atoms, A., ii, 189.
 cubical atoms, the periodic system and molecular structure, A., ii, 189.
 anomalous Zeeman effect and series system for neon and mercury, A., ii, 669.
- Landé, A.** See also **E. Madelung**.
- Landé, L. van der.** See **Andreas Smits**.
- Landon, Mary Louise.** See **James Kendall**.
- Landrieu, Philippe**, the acid and poly-acid salts of monobasic acids; mono-potassium and monolithium dibenzoates, A., i, 109.
- Lane, Frederick W.** See **Treat Baldwin Johnson**.
- Lang, H.** See **S. Lang**.
- Lang, Hermann.** See **Karl Schaum**.
- Lang, Lina.** See **P. Karrer**.
- Lang, S., and H. Lang**, the influence of sodium fluoride on the action of pancreatic diastase, A., i, 282.
- Langbein, Karl.** See **Hans Rups**.
- Langecker, Hedwig**, denterokeratose obtained from horn by means of digestion with alkali, A., i, 137.
- Langelius, E. W.** See **Sven Odén**.
- Langer, Alfons**, a reaction of American wormseed oil, A., i, 259.
 action of phosphoric oxide on salicylic acid, A., i, 345.
- Langfeldt, Einar**, blood sugar regulation and the origin of the hyperglycemias. I. Glycogen formation and glycogenolysis. II. Conditions of action of liver diastases. III. Theory, A., i, 473.
 animal calorimetry. XVII. The influence of colloidal iron on the basal metabolism, A., i, 754.
- Langhans, A.**, behaviour of mercuric fulminate with various solvents, A., i, 99.
 action of mercury fulminate on various metals and alloys, A., i, 652.
 angle of slope: a new physical constant, A., ii, 39.
 behaviour of sodium thioantimonate with certain metallic salt solutions, A., ii, 353.
 characteristic reaction for the detection of mercury fulminate, A., ii, 359.
- Langmuir, Irving**, radiation as a factor in chemical action, A., ii, 31.
 the structure of the static atom, A., ii, 689.
 the structure of the helium atom, A., ii, 689.
- Langmuir, Irving.** See also **Guy Bartlett**.
- Langenberg, A., and J. Duclaux**, process for the purification of methyl alcohol, A., i, 298.
- LaPorte, N. M.**, double nitrate of aluminium and potassium, A., ii, 699.
- Lapworth, Arthur**, latent polarities of atoms and mechanism of reaction with special reference to carbonyl compounds, A., ii, 543.
- Lapworth, Arthur, and (Mrs.) Leonora Kietz Pearson**, reduction of emulsified nitro-compounds. I. β -Phenylhydroxylamine from nitrobenzene, T., 765.
- Lapworth, Arthur.** See also **Robert Downs Haworth**.
- Laquer, Fritz.** See **Gustav Embden**.
- Larmor, (Sir) Joseph**, electro-crystalline properties as conditioned by atomic lattices, A., ii, 310.
 non-radiating atoms, A., ii, 632.
 escapements and quanta, A., ii, 632.

- Larsen, Esper S.**, and **M. L. Glenn**, minerals of the melanterite and chalcantite groups; hydrous manganese and cobalt sulphates, A., ii, 54.
- Larsen, Esper S., jun.** See **J. T. Pardee**.
- Lascar, O.** See **Constantin Kollo**.
- Laska-Mintz, Emilia.** See **Jakob K. Parnas**.
- Lassieur, Arnold**, rapid electro-analysis, A., ii, 651.
- Lassieur, Arnold**, and (*Mmc.*) **Arnold Lassieur**, rapid electro-analysis of brass, A., ii, 712.
- Lassieur, (Mmc.) Arnold.** See **Arnold Lassieur**.
- Latimer, Wendell M.**, mass effect in the entropy of solids and gases, A., ii, 350.
- Lattey, Robert Tabor**, dielectric constants of electrolytic solutions, A., ii, 426.
- Lau, E.** See **E. Gehrcke**.
- Laubengayer, A. W.**, apparent irreversibility of the calomel electrode, A., ii, 425.
- Laudat, M.**, estimation of the azotemic index, A., ii, 70.
estimation of urea in blood; actual state of the question, A., ii, 223.
- Laude, G.** See **Robert Fosse**.
- Laue, M. von**, determination of crystal structures by means of X-rays, A., ii, 626.
- Launoy, L.**, and **Y. Fujimori**, local anesthetics, A., i, 79.
- Launoy, L.**, and **M. Lévy-Bruhl**, a comparison of the action of benzene and cyclohexane on the formed elements of the blood, A., i, 204.
- Laurin, Ingvar.** See **Hans von Euler**.
- Lautenschläger, Ludwig**, action of various lactones on worm muscles, A., i, 907.
- Lawaczek, Heinz**, mechanism by which external temperature influences the lactic acid content of frog's muscle, A., i, 529.
- Lawrence, John V.** See **J. Arthur Harris**.
- Lax, E.** See **Marcilio von Pirani**.
- LeBas, Germaine**, theory of molecular refractions. I., A., ii, 361.
theory of molecular refractions. II. Free and activated valencies, A., ii, 529.
- Lebeau, P.**, and **M. Picon**, action of sodiummonium on diphenylmethane, fluorene, and indene; dimethyl-fluorene, A., i, 660.
the estimation of bromine in salt waters, A., ii, 591.
- Lebo, Robert B.**, properties of mixtures of isopropyl alcohol and water, A., i, 493.
- Leeco, Alexander.** See **Augustin Bistrzycki**.
- Le Chatelier, Henri**, the phase rule, A., ii, 31.
the double saline decompositions and their geometric representation, A., ii, 248.
- Lecher, Hans**, and **Alfred Goebel**, the valency problem of sulphur. V. Molecular weight of thiocyanogen, A., i, 853.
- Lecher, Hans**, and **Kurt Simon**, the valency problem of sulphur. IV. Arylthiol thiocyanates, A., i, 414.
the valency problem of sulphur. VI. The sulphur analogues of the aromatic diazonium compounds, A., i, 860.
- Lecher, Oskar.** See **Burckhardt Helferich**.
- Lechner, G.** See **W. Botha**.
- Le Coultrre, M.** See **Leopold van Itallie**.
- Ledebt, (Mlc.) S.** See **W. Meitzner**.
- Lederer, Karl**, tri-*o*-anisyltellurium salts, A., i, 108.
- Lederle, P.** See **Felix Mach**.
- Ledig, P. G.**, inflammability of jets of hydrogen and inert gas (helium), A., ii, 111.
- Leduc, (Sylvestre) Anatole**, new equation of state of gases, founded on a knowledge of the internal pressures, A., ii, 429.
- Lees, S.**, constant volume explosion experiments, A., ii, 428.
- Legg, David Alliston.** See **Charles Weizmann**.
- Legrand**, estimation of maltose or lactose in the presence of other reducing sugars (use of Barfoed's solution), A., ii, 355.
- Le Grand, L.**, estimation of lactose in the presence of other reducing sugars, A., ii, 661.
- Lehmann, Fritz.** See **Ernst Beckmann**.
- Lehmann, Otto**, the molecular directing force in liquid crystals, A., ii, 174.
the molecular forces operative in liquid crystals and their relation to known forces, A., ii, 175.
- Lehmann, R.** See **Alfred Lottemoser**.
- Leitmeyer, Hans**, carbonates. II., A., ii, 112.
- Lemarchands, M.**, the metallurgy of zinc, A., ii, 550.
- Lemarchands, M.** See also (*Mmc.*) **M. Lemarchands**.
- Lemarchands, (Mmc.) M.**, and **M. Lemarchands**, method of separating ferric, aluminium, and chromium hydroxides, A., ii, 351.

- Lemberger, Z. See *Karol Dzięwiński*.
- Lemeland, P., the chemical and physiological investigation of the fats and lipids of the blood, A., i, 633.
- Lemmel, Leo. See *Fritz Straus*.
- Lehmann, Otto, and Ludwig Fresenius, estimation of soil acidity by means of the iodine method, A., ii, 516.
- Lemoine, Georges, mutual reaction of oxalic acid and iodic acid. I, II., and III., A., ii, 100, 500, 540.
- Lenaisan, F. Beaulard de, and L. Maury, the conductivity of the solution of cupric ammonium citrate compared with that of copper sulphate, A., ii, 534.
- Lenher, Victor, preparation of selenium oxychloride, A., ii, 109.
some properties of selenium oxychloride, A., ii, 256.
silicic acid, A., ii, 331.
- Lenz, Emil, pharmacology of acridine and acridinium compounds, A., i, 756.
- Lenze, F., R. Pleus, and J. Müller, wood cellulose, A., i, 163.
- Lepape, Adolphe. See *Charles Moureu*.
- Lepierre, Charles, a new type of mineral water; nitrated waters, A., ii, 704.
- Lepierre, Charles. See also *Alfred Bensaud*.
- Lescour, L. See *H. Doublet*.
- Lespiau, Robert, action of β -dibromopropylene on magnesium isopropyl bromide, A., i, 490.
preparation of true acetylenic hydrocarbons from β -dibromopropylene, A., i, 656.
- Lessing, Rudolf, fractional distillation with contact ring still-heads, A., ii, 434.
- Le Sueur, Henry Rondel, obituary notice of, T., 2125.
- Le Sueur, Henry Rondel, and Cyril Christian Wood, the mechanism of the action of fused alkalis. II. The action of fused potassium hydroxide on phenylglyceric acid, T., 1697.
- Léteur, F., decomposition of iron oxides, A., ii, 218.
- Leuchs, Hermann, asymmetric transformation, A., i, 442.
- Leuchs, Hermann, Emil Hellriegel, and Harry Heering, strychnos alkaloids. XXIX. Oxidation of cryptobrucenone and its preparation from brucenone-6, A., i, 833.
- Levaditi, C. See *Robert Sazerac*.
- Levene, Phœbus A., preparation and analysis of animal nucleic acid, A., i, 821.
- Levene, Phœbus A., the structure of thymus-nucleic acid and its possible bearing on the structure of plant-nucleic acid, A., i, 821.
the numerical values of the optical rotations in the sugar acids, A., ii, 613.
- Levene, Phœbus A., and E. P. Clark, d-ribohexosamic acids, A., i, 318.
- Levene, Phœbus A., and J. López-Suarez, the chemical structure of chondridin, A., i, 296.
- Levene, Phœbus A., and Gustave Morris Meyer, preparation of galactonolactone, A., i, 392.
- Levene, Phœbus A., and Gustave Morris Meyer [with I. Weber], phosphoric esters of some substituted glucoses and their rate of hydrolysis, A., i, 845.
- Levene, Phœbus A., and Louis A. Mikeska, possible asymmetry of aliphatic diazo-compounds, A., i, 233.
- Levene, Phœbus A., and Ida P. Rolf, lecithin. III. Fatty acids of lecithin of the egg yolk, A., i, 382.
lecithin. IV. Lecithin of the brain, A., i, 476.
- Levene, Phœbus A., and H. S. Simms, the liver lecithin, A., i, 842.
- Levi, Giorgio Renato, volumetric estimation of aminonaphthol-mono- and -disulphonic acids, A., ii, 599.
- Levin, (Miss) Esther. See *Frederick Maurice Rowe*.
- Levine, P. E. See *Sergius Morgulis*.
- Lévy, (Mlle.) Jeanne, some retropinacolic transpositions, A., i, 233.
semipinacolic and semihydrobenzoic transpositions in the phenyldimethylglycol series; action of concentrated acids, A., i, 788.
the molecular transpositions in the series of alkylhydrobenzoins and of the analogous α -glycols, A., i, 860.
some retropinacolic transpositions and the mechanism of these transpositions, A., i, 861.
- Lewandowski, M. See *Ernst Waser*.
- Lewin, L., trinitrobenzene poisoning, A., i, 640.
- Lewis, Gilbert Newton, and Merie Randall, thermodynamic treatment of concentrated solutions and applications to thallium amalgams, A., ii, 241.
activity coefficient of strong electrolytes, A., ii, 427.
- Lewis, Howard B., synthesis of hippuric acid in the rabbit after exclusion of bile from the intestine, A., i, 382.
- Lewis, Howard B. See also *Adam A. Christman*.

- Lewis, William Cudmore McCullagh**, and **A. McKeown**, radiation theory of thermal reactions, A., ii, 623.
- Lewis, W. Lee**, **C. D. Lowry**, and **F. H. Bergeim**, some derivatives of phenoxarsine, A., i, 471.
- Ley, Heinrich**, and **G. Pfeiffer**, optical investigations of the constitution of aromatic amines, A., i, 325.
- Lévy-Bruhl, M.** See **L. Launoy**.
- Lieb, Hans**, aromatic diarsinic acids, and their reduction products. I., A., i, 696.
- Lieb, Hans**, and **Gustav Schwarzer**, condensations of aromatic diamines with phthalic anhydride. II., A., i, 690.
- Lieben, Fritz**. See **Otto von Fürth**.
- Liebisch, Theodor**, and **Heinrich Rubens**, optical properties of some crystals in the long-wave infra-red spectrum. III., A., ii, 232.
- Liebisch, Theodor**, and **Ehr. Vortisch**, crystallisation in ternary systems of the chlorides of univalent and bivalent metals. II., A., ii, 262.
- Liebl, Richard**. See **Robert Kremann**.
- Liebreich, E.**, influence of chlorides on the decomposition voltage curve of chromic acid, A., ii, 678.
- Liempt, J. A. M. van**, the vapour pressure and sublimation curves for some important metals, A., ii, 165. the condition diagram of carbon, A., ii, 429.
- Liesche, Otto**. See **Ernst Beckmann**.
- Lifschitz, Israel**, functions of chromophores. VIII. Chromophores of conjugated compounds, A., ii, 287.
- Lifschitz, Israel**, and **Ch. L. Joffé**, photochemical transformations in the triphenylmethane series and photo-concentration cells, A., ii, 365.
- Lifschitz, Israel**, and **Ernst Rosenbohm**, functions of chromophores. VII. Optical properties of some heavy metal complexes. II., A., ii, 286.
- Lifschütz, Isaac**, the action of alcoholic sodium acetate solution on cholesterol dibromide, A., i, 25. undecamethylenedicarboxylic acid as a degradation product of oleic acid, A., i, 496.
- Lillienfeld, Leon**, preparation of alkyl sulphates, A., i, 299. preparation of new derivatives of the carbohydrates $(C_6H_{12}O_6)_n$ and their homologues, A., i, 650.
- Lillie, Ralph Stayer**, recovery of transmissivity in passive iron wires as a model of recovery processes in irritable living systems. I. and II., A., ii, 80, 152.
- Lillig, R.**, occurrence of arsenic in soils and in vegetable and animal substances, and its forensic importance, A., i, 216.
- Lilly, E. G.** See **Karl T. Compton**.
- Limburg, A. E. Rost van**. See **D. de Miranda**.
- Lindeman, Johs.**, and **Theodor Svedberg**, stability relationships of platinum-organosols, A., ii, 543.
- Lindh, Axel E.** See **Manne Siegbahn**.
- Lindsay, Walter L.** See **Homer Rogers**.
- Lindsay Light Co.**, preparation of insoluble thorium compounds [double metaphosphate and sulphate of thorium], A., ii, 266.
- Ling, Arthur Robert**, and **Dinshaw Ruttonji Nanji**, volumetric estimation of phenylhydrazine and its application to the estimation of pentosans and pentoses, A., ii, 601.
- Lingen, J. Steph. van der**, anisotropic liquids, A., ii, 438. X-ray and infra-red investigations of the molecular structure of liquid crystals, A., ii, 681.
- Linke, B.**, action of the three isomeric ethylaminobenzoic acids on benzo- and tolu-quinones, A., i, 186.
- Lipp, Peter**, and **C. Padberg**, apotricyclo, a derivative of cyclopropanol and its ketonisation, A., i, 559.
- Lippmann, Edmund Oskar von**, botanical chemical notes, A., i, 86. history of the knowledge of combustion, A., ii, 107. "caput mortuum" again, A., ii, 553.
- Lipschitz, Werner**, the mechanism of the toxic action of aromatic nitro-compounds; the respiration problem of animal and plant cells, A., i, 293.
- Little, Ernest**, and **Joseph Costa**, iodometric method for the estimation of chromium in chromite, A., ii, 352.
- Liverseege, John Francis**, sugar calculations, A., ii, 714.
- Lizius, John Leonard**, method for the estimation of the acidity of coloured solutions, A., ii, 461. estimation of small quantities of phosphate in glycerophosphates, A., ii, 518. joint use of two indicators in the titration of acids and bases, A., ii, 650.
- Lobinger, Albert**. See **Robert Kremann**.
- Lockemann, Georg**, a rotary burner, A., ii, 447. double arsenic tubes, A., ii, 594.
- Loeb, Jacques**, ion series and the physical properties of proteins. II., A., i, 136. chemical character and physiological action of the potassium ion, A., i, 145.

- Loeb, Jacques**, ion series and the physical properties of proteins. III. Action of salts in low concentration, A., i, 367.
chemical and physical behaviour of casein solutions, A., i, 367.
the colloidal behaviour of proteins, A., i, 368.
the Donnan equilibrium and the physical properties of proteins. I. Membrane potential. II. Osmotic pressure, A., i, 627.
Donnan equilibrium and the physical properties of proteins. III. and IV. Viscosity, A., i, 693, 822.
the proteins and colloid chemistry, A., i, 819.
the reciprocal relation between the osmotic pressure and the viscosity of gelatin solutions, A., i, 822.
- Loeb, L. Farmer**, alveolar tension of carbon dioxide in the lungs; its importance for the regulation of breathing and for the estimation of acidosis in *Diabetes mellitus*, A., i, 378.
- Loeb, Robert F.**, radioactivity and physiological action of potassium, A., i, 145.
- Loeb, Robert F.** See also *Walter W. Palmer*.
- Loeper, M., R. Debray**, and *J. Tonnet*, chemical modifications of the vagus nerve during digestion, A., i, 635.
- Löwenheim, Helene**. See *Carl Mannich*.
- Lombard, Maurice**, detection of fluorescein in very dilute solutions, A., ii, 528.
- Lo Monaco, Domenico**, new method of hydrolysing proteins and tissues in the cold, A., i, 216.
- Long, Cyril Norman Hugh**. See *Maurice Copisarow*.
- Long, Walter S.** See *Frank Burnett Dains*.
- Longchambon, Louis**, the measurement of rotatory power in biaxial crystals, A., ii, 421.
rotatory power in crystalline media, A., ii, 531.
- Longinescu, G. G.**, and *Gabriela Chaborski*, detection of hydrochloric acid in the presence of hydrobromic acid and hydriodic acid, A., ii, 410.
detection of nitric acid, A., ii, 411.
- Longinescu, G. G.**, and *G. P. Theodorescu*, separation of the metals of the second group, A., ii, 413.
- Longobardi, Ernesto**, colour and optical activity in organic compounds, A., ii, 288.
- Longstaff, George Blundell**, obituary notice of, T., 2127.
- Loomis, F. W.**, infra-red spectra of isotopes, A., ii, 530.
- López-Suarez, J.** See *Phabus A. Levene*.
- Lorenz, Richard**, the theory of electrolytic ions. XIX. Determination of the size of the benzene nucleus from [electrical] conductivity, A., ii, 158.
theory of electrolytic ions. XX. Hertz's theory of ionic mobility, A., ii, 158.
the sizes of the kations of the alkali metals, A., ii, 191.
- Lorenz, Richard**, and *Walter Herz*, boiling-point relationships, A., ii, 433.
fused salts and the law of corresponding states, A., ii, 486.
atomic volume and molecular volume at the absolute zero, A., ii, 536.
- Lorenz, Richard**, and *Wilhelm Michael*, the theory of electrolytic ions. XXIII. The conductivity of some binary electrolytes; third test of Paul Hertz's theory of conductivity, A., ii, 482.
- Lorenz, Richard**, and *Wilhelm Neu*, the theory of electrolytic ions. XXII. The migration velocity of some ions; a second test of Paul Hertz's theory of ion conductivity, A., ii, 481.
- Lorenz, Richard**, and *Philipp Osswald*, the theory of electrolytic ions. XXI. A first proof of Hertz's theory of conductivity, A., ii, 158.
- Lorenz, Richard**, and *A. Scheuermann*, the theory of electrolytic ions. XXIV. The conductivity of some neutral sodium salts of polybasic organic acids, A., ii, 482.
the theory of electrolytic ions. XXV. The apparent size of the anions of some aliphatic and aromatic polycarboxylic acids and of benzene, A., ii, 483.
- Loria, Stanislaw**, volatilisation of thorium-*B* and thorium-*C* deposited on gold, A., ii, 294.
- Loring, Frederick Henry**, is H composed of a whole-number part (*A*) plus an auxiliary part (*B*) and a rotating electron (*C*)? A., ii, 102.
nickel isotopes, A., ii, 570.
- Lormand, Ch.** See *Maurice François*.
- Losana, L.** See *F. Graziani*.
- Losanitch, Sima M.**, note on dithiocarbazine acid, T., 763.
- Lo Surdo, A.**, synthetic helium and neon, A., ii, 331.
- Lottermoser, Alfred**, constitution of "iodide of starch," A., i, 708.
- Lottermoser, Alfred**, and *R. Lehmann*, catalysis [of the decomposition] of hydrogen peroxide by colloidal manganese dioxide, A., ii, 688.

- Lovelace, Benjamin Franklin, Joseph Christie Whitney Frazer, and V. B. Sease**, the lowering of the vapour pressure of water at 20° produced by dissolved potassium chloride, A., ii, 239.
- Löven, J. M., and R. Ahlberg**, α -sulphodipropionic acid, A., i, 223.
- Low, A. H.**, stabilisation and standardisation of thiosulphate solution for the copper assay, A., ii, 133.
volumetric estimation of mercury, A., ii, 134.
- Lowe, P.** See *John Cunningham McLennan*.
- Lowry, C. D.** See *W. Lee Lewis*.
- Lowy, Alexander, and Emil Harold Balz**, derivatives of 2:4:6-trinitrobenzaldehyde, A., i, 337.
- Lowy, Alexander, and Thomas B. Downey**, derivatives of 2:4-dinitrobenzaldehyde. II, A., i, 337.
- Lowy, Alexander, and Charles G. King**, derivatives of *p*-nitrobenzaldehyde, A., i, 337.
- Lucasius, C.** See *M. Kochmann*.
- Luce, R.**, chemical reactions and radii of curvature, A., ii, 440.
- Luckhart, Arno B.** See *Fred C. Koch*.
- Ludwig, Eugene**, a simple apparatus for the identification of gases evolved in the qualitative tests for acids, A., ii, 271.
microchemical analysis with reagents sensitised by saturation, A., ii, 271.
a new method for the detection of chlorine and bromine ions in the presence of iodine ions, A., ii, 273.
- Ludwig, Eugene, and D. Butescu**, microchemical analysis with reagents sensitised by saturation, A., ii, 271.
- Ludwig, Eugene, and (Mlle.) Hélène Spirescu**, the detection of sodium and potassium ions in the presence of magnesium ions; simplified method, A., ii, 215.
simplified methods of analysis in the calcium group, A., ii, 276.
- Ludwig, R.** See *Ernst Weitz*.
- Ludwig, Willy.** See *Fritz Mayer*.
- Ludwig-Semeló, Zdenka**, the synthesis of oxazines and thiazines of the naphthalene series, A., i, 413, 689.
- Lück, E. A.**, catalytic action of hydrogen peroxide on potassium ferro- and ferri-cyanides, A., i, 232.
- Lüers, Heinrich**, a general colloid test in cerebro-spinal fluid, and the use of congo-rubin in particular for this purpose, A., i, 75.
colour change of congo-rubin with time and the influence of electrolytes and protecting colloids, A., ii, 26.
- Lüers, Heinrich, and M. Schneider**, viscosity-concentration function of poly-disperse systems, A., ii, 86.
measurement of solvation (swelling) in colloids, A., ii, 175.
- Lührig, H.**, quantity of hydrocyanic acid in the beans of *Phaseolus lunatus*, A., i, 387.
polarimetric estimation of starch, A., ii, 356.
micro-estimation of nitrogen, A., ii, 557.
- Luff, G.**, separation of tin and antimony in hydrochloric acid solution by means of hydrogen sulphide, A., ii, 353.
- Lumière, Auguste, Louis Lumière, and Alphonse Seyewetz**, the developing properties of leuco-bases of dyes derived from rosaniline, A., ii, 615.
- Lumière, Louis.** See *Auguste Lumière*.
- Lund, Yappa.** See *Joseph E. Greaves*.
- Lundell, Gustav Ernst Fred**, estimation of iron by the cupferron method, A., ii, 414.
- Lundell, Gustav Ernst Fred, and J. I. Hoffman**, estimation of cobalt and nickel in cobalt steels, A., ii, 561.
- Lundell, Gustav Ernst Fred.** See also *William Francis Hillebrand*.
- Lupfer, Egbert.** See *Robert Kremann*.
- Luther, J. B.**, the Turner reaction for gurjun balsam, A., ii, 468.
- Luther, Robert**, separating funnel for quantitative extractions, A., ii, 270.
- Luttringer, A.**, preparation of terpinyl esters, A., i, 116.
synthetic camphor, A., i, 116.
- Luttringer, A., and André Dubosc**, preparation of bornyl formate, A., i, 115.
the action of formic acid on dry pinene hydrochloride, A., i, 115.
- Luttringer, A.** See also *André Dubosc*.
- Lutz, Franz**, volumetric estimation of alkali pyrophosphates, A., ii, 483.
- Lutz [Jacob] Oskar**, sensitiveness and applicability of qualitative reactions. II. Barium ions, A., ii, 596.
- Lyding, Georg**, lactacidogen-phosphoric acid and the residual phosphoric acid content in the muscles of fowls and pigeons, A., i, 523.
- Lyman, Theodore.** See *Hugo Fricke*.
- Lynch, Vernon**, chemistry of whitish sperm, A., i, 75.
- Lyon, Nikolaus, and Fritz Wolfram**, dependence of electrical double refraction on temperature, A., ii, 6.

M.

- Maass, Otto**, sulphuric acid concentrator and vacuum pump, A., ii, 104.
- Maass, Otto**, and **W. H. Hatcher**, properties of pure hydrogen peroxide. I., A., ii, 106.
- Maass, Otto**, and **Otto W. Herzberg**, properties of pure hydrogen peroxide. II., A., ii, 106.
- Maass, Otto**, and **J. Russell**, unsaturation and molecular compound formation, II., A., i, 761.
- Maass, Otto**, and **C. H. Wright**, some physical properties of hydrocarbons containing two and three carbon atoms, A., i, 489.
- a variable resistance, A., ii, 424.
- Macallum, A. Douglas**, examination of neosalvarsan [neosalvarsan], A., ii, 420.
- McAlpine, Roy K.** See **Hobart Hurd Willard**.
- McBain, James William**, and **Herbert Ernest Martin**, the hydration of the fibres of soap curd. I. The degree of hydration determined in experiments on sorption and salting out, T., 1369.
- McBain, James William**, and **Cyril Sebastian Salmon**, the hydration of the fibres of soap curd. II. The dew-point method, T., 1374.
- McBain, James William**. See also **W. F. Darke**.
- Macbeth, Alexander Killen**, gasometric estimation of hypochlorites, A., ii, 461.
- Macbeth, Alexander Killen**, and **David Doig Pratt**, the halogen derivatives of nitroform, T., 354.
- the labile nature of the halogen atoms in substituted nitromethanes, T., 1358.
- Macbeth, Alexander Killen**. See also **David Templeton Gibson**, and **Hugh Graham**.
- McCall, A. G.**, and **J. R. Haag**, the relation of the hydrogen-ion concentration of nutrient solutions to growth and chlorosis of wheat plants, A., i, 911.
- McCann, G. F.** See **A. F. Hess**, and **L. von Meysenbug**.
- McCarty, Arthur C.** See **Raymond L. Stehle**.
- McClelland, Ernest Wilson**. See **Samuel Smiles**.
- McClelland, John Alexander**, and **P. J. Nolan**, the nature of the ions produced by phosphorus, A., ii, 3.
- McClendon, J. F.**, hydrogen-ion concentration in the contents of the small intestine, A., i, 634.
- methods of extracting and concentrating vitamins A, B, and C, together with an apparatus for reducing milk, fruit juices, and other fluids to a powder without destruction of vitamins, A., i, 839.
- McCollum, Elmer Verner**, **Nina Simmonds**, **P. G. Shipley**, and **E. A. Park**, experimental rickets. VIII. Production of rickets by diets low in phosphorus and fat-soluble A, A., i, 757.
- McCollum, Elmer Verner**. See also **Margaret B. MacDonald**.
- McCombie, Hamilton**. See **Albert Eric Cashmore**.
- Macdonald, Alexander D.** See **James B. Conant**.
- MacDonald, Margaret B.**, and **Elmer Verner McCollum**, the cultivation of yeast in solutions of purified nutrients, A., i, 480.
- MacDougall, Frank Henry**, molecular heat of hydrogen, A., ii, 238.
- McElroy, William S.**, and **H. O. Pollock**, the rate of nitrogen elimination, A., i, 531.
- McEwan, Thomas Lawson**. See **James Irvine Orme Masson**.
- McGee, J. M.**, preparation and properties of sodamide, A., ii, 334.
- Macgregor, A. M.** See **Arthur Hutchinson**.
- Mach, Felix**, and **P. Lederle**, estimation of the alkaloid content of lupines, A., ii, 718.
- Mach, Felix**, and **F. Sindlinger**, source of error in the estimation of nitrate-nitrogen by Ulsch's method, A., ii, 594.
- Macheleidt, R.** See **Walter Adolf Roth**.
- Machens, A.**, and **Fr. Cordes**, apparatus for estimating the catalase content of milk, A., ii, 227.
- MacInnes, Duncan A.**, hydrogen over-voltage, A., ii, 11.
- ionic mobilities, ionic conductivities, and the effect of viscosity on the conductivity of certain salts, A., ii, 619.
- MacIntire, Walter Hogg**, **F. J. Gray**, and **W. M. Shaw**, non-biological oxidation of elementary sulphur in quartz media, A., ii, 327.
- McKee, Ralph H.**, and **Frank A. Strauss**, synthesis of chlorine-free benzoic acid from benzene, A., i, 415.

- McKellips, G. M., I. M. de Young, and W. R. Bloor**, distribution of phosphoric acid in the blood of normal infants, A., i, 698.
- McKenzie, Alexander, and Fred Barrow**, β -amino- β -phenylpropionophenone, T., 69.
- McKenzie, Alexander, and John Scott Walker Boyle**, action of magnesium phenyl haloids on diphenylchloroacetyl chloride; constitution of triphenylvinyl alcohol, T., 1131.
- McKeown, A.** See *William Cudmore McCullagh Lewis*.
- McKie, (Miss) Phyllis Violet**, determination of the composition of mixtures of eugenol and isoeugenol benzoates by means of melting points, T., 777.
- McKie, (Miss) Phyllis Violet.** See also *Kennedy Joseph Previté Orton*.
- MacLachlan, Thomas**, estimation of nitrates in bismuth salts by means of titanium chloride and Devarda's alloy, A., ii, 518.
- MacLaughlin, John A.** See *Dirk Hendrik Brauns*.
- MacLean, (Mrs.) Ida Smedley, and Ethel Mary Thomas**, abnormal iodine values with special reference to the sterols and resins, A., i, 565.
- McLean, J.**, preparation of fibrinogen, A., i, 467.
- McLennan, John Cunningham**, refractive indices of mercury and thallium vapours, A., ii, 665.
- McLennan, John Cunningham**, spectrum of ionised potassium, A., ii, 667.
- McLennan, John Cunningham, and E. Evans**, mobilities of ions in helium at high pressure, A., ii, 478.
- McLennan, John Cunningham, and P. Lowe**, structure of the Balmer series lines of hydrogen, A., ii, 666.
- McLennan, John Cunningham, and W. W. Shaver**, emission and absorption spectra of mercury, A., ii, 668.
- McLennan, John Cunningham, and R. F. Zumstein**, absorption and series spectra of lead, A., ii, 474.
- McLeod, Charles Macriell, and (Mrs.) Gertrude Maude Robinson**, researches on pseudo-bases. III. Dialkylamino-methyl alkyl ethers and sulphides, T., 1470.
- McMaster, LeRoy, E. Bender, and E. Weil**, the solubility of phthalic acid in water and in sodium sulphate solutions, A., i, 511.
- McMillan, Andrew.** See *Thomas Stewart Patterson*.
- McNair, James B.**, lobinol—a dermatitant from *Rhus diversiloba* (poison oak), A., i, 387.
- McRae, Duncan, and C. C. van Voorhis**, vapour pressure of white phosphorus from 44° to 150°, A., ii, 328.
- Macri, V.**, reaction of manganese salts, A., ii, 278.
- MacTaggart, Alexander**, the influence of certain fertiliser salts on the growth and nitrogen content of some legumes, A., i, 913.
- Madelung, E., and A. Landé**, a dynamical model of a cubical atom, A., ii, 190.
- Madelung, Walter**, indigotin, A., i, 810.
- Madinaveitia, Antonio, and Fernando Diaz Aguirreche**, catalytic action and micellar magnitude (degree of dispersion), A., ii, 390.
- Madinaveitia, Antonio.** See also *J. R. Carracido*.
- Madison, O. E.** See *F. E. Bartell*.
- Mäder, W.** See *P. Karrer*.
- Maestrini, Dario**, enzymes. IV. emulsin, cytoase, creptase, and urease in germinating barley, A., i, 152.
- enzymes. V.** Resistance of ptyalin to the action of hydrochloric acid in the presence of starch, A., i, 281.
- enzymes. VI.** Protective action of starch and other substances on ptyalin in acid media, A., i, 628.
- Magasanik, J.** See *Georg Wiegner*.
- Magne, H.** See *André Mayer*.
- Magness, J. R.**, composition of gases in the intercellular spaces of apples and potatoes, A., i, 759.
- Mahdihassan, S.** See *Gilbert John Fowler*.
- Mahood, Samuel A.**, thermal decomposition of turpentine, with particular reference to the production of toluene and isoprene, A., i, 116.
- Maihe, Alphonse**, catalytic preparation of secondary amines and attempts at alkylation of these bases, A., i, 397.
- preparation of amines of secondary alcohols**, A., i, 314.
- catalytic hydrogenation of phenylhydrazones**, A., i, 463.
- halogen derivatives of methylethylbenzene**, A., i, 502.
- the catalytic decomposition of polyhalogenated aliphatic hydrocarbons**, A., i, 534.
- nitro- and amino-derivatives of methylethylbenzene**, A., i, 661.
- preparation of a petrol from a vegetable oil**, A., i, 706.
- petrol prepared from rape oil**, A., i, 841.

- Mailhe, Alphonse** [with *F. de Godon*], certain catalytic reactions, A., ii, 391.
- Mailhe, Alphonse**, and *F. de Godon*, preparation of methyl derivatives of the xylydines and naphthylamines by catalysis, A., i, 108.
- esterification by zirconium oxide, A., i, 219.
- preparation of mixed secondary and tertiary phenolic amines, A., i, 504.
- Mains, G. H.** See *Harrison Eastman Patten*.
- Maki, Toshio**, the constitution of thiofluorescein and its technical applications, A., i, 183.
- Makino, Komataro**, electrical states of iodine vapour when emitting line and band spectra, A., ii, 142.
- Mallanndeh, Sreenagula**, colour reaction for acenite, A., ii, 470.
- Mallermann, R. de**, the rotatory power of tartaric and malic acids in solution, A., i, 7.
- variation of the rotatory power of tartaric acid, A., i, 158.
- the inversion of the rotatory power of derivatives of tartaric acid, A., ii, 614.
- Malm, M.**, a reaction to distinguish between theobromine and caffeine, A., ii, 360.
- Malvezin, Philippe**, and *C. Rivilland*, estimation of small quantities of iron in organic liquids, especially in wines, A., ii, 361.
- Manchot, Wilhelm**, the constitution of the mercury compounds of carbon monoxide and of ethylene. II., A., i, 329.
- Mancini, Mario A.**, physiological action of 88'-di-iodoisopropyl alcohol and of 8γ-di-iodo-*n*-propyl alcohol, A., i, 289.
- Mandal, Hf.**, abnormal aniline salts, A., i, 106.
- aniline lead compounds, A., i, 410.
- Maniöke, Paul.** See *Hermann Kunz-Krause*.
- Mann, Frederick George**, (*Sir*) *William Jackson Pope*, and *Richard Henry Vernon*, the interaction of ethylene and sulphur monochloride, T., 634.
- Mann, Hubert**, an apparatus for continuous dialysis or extraction, A., ii, 23.
- Mannich, Carl**, and *S. Kroll*, phenacyl- and dihydroxyphenacyl-derivatives of theobromine and theophylline, and their corresponding secondary alcohols, A., i, 584.
- Mannich, Carl**, and *Helene Löwenheim*, two new reduction products of codeine, A., i, 124.
- Manning, Alexander Bernard**, the influence of neutral salts on the hydrolysis of ethyl formate, T., 2079.
- Manolesco**, action of magnesium ethyl bromide on 1:3 dibenzylidene-2-cyclohexanone and 1:3-dibenzylidene-4-methyl-2-cyclohexanone, A., i, 513.
- Maquenne, Léon**, the estimation of small quantities of iron, A., ii, 561.
- Maquenne, Léon**, and *Raoul Cerighelli*, the distribution of iron in plants, A., i, 759.
- Maquenne, Léon**, and *Ém. Demoussy*, the respiration of leaves in a vacuum or in atmospheres poor in oxygen, A., i, 753.
- the resistance of plants to asphyxia, A., i, 759.
- Marcelet, H.**, hydrogenation of some marine animal oils, A., i, 646.
- Marcelin, A.**, surface tension of unimolecular layers, A., ii, 488.
- Marcellino, A.** See *Michele Gina*.
- Marchal, (Mlle.) G.** See *Camille Matignon*.
- Marchetti, Paolo.** See *Umberto Sborgi*.
- Marck, J. L. B. van der**, estimation of lecithin, A., ii, 526.
- Marousson, Julius**, syntheses of humins and humic acids, A., i, 313.
- the structure of humic acids and coals, A., ii, 590.
- Marden, John W.** See *Mollie G. White*.
- Margary, Jean D.**, periodic table; a modification more in accord with atomic structure, A., ii, 543.
- Margosches, Benjamin Max**, and *R. Baru*, a modification of Aschman's method of determining the iodine value, A., ii, 716.
- Marrack, (Miss) Muriel Tregarthen.** See *Tom Sidney Moore*.
- Marie, Charles**, and *William Albert Noyes, jun.*, new method of measuring electrolytic conductivity, A., ii, 426.
- Marignac, C. de**, hypotheses on the unity of matter, A., ii, 101.
- Marsh, Joseph Kranth.** See *George Gerald Henderson*.
- Marshall, A. G.** See *Henry Thomas Tizard*.
- Marshall, Eli Kennedy, jun.**, and *John W. Williams*, the toxicity and skin irritant effect of certain derivatives of 88'-dichlorodichthyl sulphide, A., i, 207.
- Marshall, J.**, a law of force giving stability to the Rutherford atom, A., ii, 322.
- Martin, Felix**, estimation, by acetylation, of borneol and its acylated derivatives, A., ii, 355.

- Martin, Herbert Ernest.** See *James William McBain*.
- Martin, J. C.** See *D. R. Hoagland*.
- Martinet, Jk.,** the colour of the indigoils, A., i, 273.
- migration of the sulphonic acid group in aromatic molecules, A., i, 732.
- Martinet, Jk., and P. Coisset,** action of chloraloxime on aromatic amines; synthesis of isatins, A., i, 516.
- Martinet, Jk., and O. Dornier,** isatin-5-sulphonic acid, A., i, 273.
- new sulphonated derivatives of oxindoles and isatin, A., i, 516.
- Martinet, Jk., and A. Haehl,** *mm'*-dinitrodiphenylsulphone, A., i, 854.
- Martinet, Jk.** See also (*Mlle.*) *J. Bonnefoy*, and (*Mlle.*) *A. Roux*.
- Marvel, Carl S., and William Albert Noyes,** the possible asymmetry of the aliphatic diazo-compounds, A., i, 15.
- Marwitzky, Karl.** See *Heinrich Biltz*.
- Masing, G.,** recrystallisation of metals; the recrystallisation of zinc, A., ii, 639.
- Mason, Edward H.,** the absorption of calcium salts in man, A., i, 698.
- Mason, Frederick Alfred,** β -hydroxy- β -3:4-methylenedioxyphenylethylamine and its derivatives, T., 1077.
- Massink, A.,** relation between certain constants in the system $\text{CO}_2\text{aq.}-\text{CaCO}_3$, A., ii, 59.
- Masson, David Orme,** the constitution of atoms, A., ii, 191.
- Masson, James Irvine Orme, and Thomas Lawson McEwan,** analysis of liquid and gaseous mixtures of ether, alcohol, and water, A., ii, 281.
- Masson, James Irvine Orme.** See also *William Edward Garner*.
- Masucci, P.** See *F. M. Huntoon*.
- Matejka, Josef,** colorimetric estimation of iron in silicates with ammonium thiocyanate, A., ii, 658.
- Mathias, Émile, Claude Auguste Crommelin, and Heike Kamerlingh Onnes,** the rectilinear diameter of hydrogen, A., ii, 256.
- Mathieu, L.,** estimation of iron in wines, A., ii, 415.
- estimation of small quantities of iron, A., ii, 561.
- identification of tartaric acid in wines, A., ii, 662.
- Matignon, Camille,** reactions producing magnesium, A., ii, 262.
- action of iodine in the cold on different metals; detection of the presence of chlorine in the atmosphere, A., ii, 272.
- principles of new methods applicable to the determination of molecular weights, A., ii, 379.
- Matignon, Camille, and M. Fréjaques,** the transformation of ammonia into carbamide, A., ii, 33.
- Matignon, Camille, and (*Mlle.*) G. Marchal,** the use of enamelled bombs in calorimetry, A., ii, 379.
- Matsubara, A.,** chemical equilibrium between iron, carbon, and oxygen, A., ii, 644.
- Matsui, Motooki, and Tadasu Nakazawa,** detection and estimation of nickel and cobalt, A., ii, 219.
- Matsui, Motooki, and Shin Shimizu,** electrolytic reduction of menthone, A., i, 186.
- Matsumiya, Kaori,** organic compounds of arsenic. I. Reaction between the Grignard reagent and arsenious chloride, A., i, 70.
- Matsuno, Kichimatsu,** coagulation of arsenious sulphide sols by cobaltic complexes, A., ii, 637.
- stereochemical configuration of the aquo-triammine and diammine cobalt complex salts, A., ii, 644.
- Matsuno, Kichimatsu.** See also *William Edward Garner*.
- Mattaar, Th. J. F.,** the direct synthesis of carbamide by urease, A., i, 293.
- Mattaar, Th. J. F.** See also *Jona Timmermans*.
- Mattick, Elfrida Constance Victoria, and Robert Stenhouse Williams,** influences of reaction on colour changes in tryptophan solutions, A., i, 641.
- Matula, Johann.** See *Mazindion Samec*.
- Matulka, N.** See *Ferdinand Henrich*.
- Maue, G.,** detection of methyl alcohol in spirits, A., ii, 220.
- detection of methyl alcohol, A., ii, 281.
- Mauguin, Ch.,** possible utilisation of the diagrams of diffraction of X-rays for the complete determination of the structure of quartz, A., ii, 681.
- Mauguin, Ch., and Louis Jacques Simon,** the preparation and some physical constants of cyanogen chloride, A., i, 232.
- Maury, L.** See *P. Benard de Lemaizan*.
- Mauthner, Ferdinand,** synthesis of 35-dimethoxybenzaldehyde, A., i, 32.
- allyl derivatives of resorcinol and quinol, A., i, 726.
- synthesis of pikamar, A., i, 726.
- Maunellus, R.** See *G. Aminoff*.
- Max, Fritz.** See *Heinrich Biltz*.
- Maxted, Edward Bradford,** the influence of mercury, sulphur, arsenic, and zinc on the catalytic activity of platinum, T., 225.

- Marted, Eduard Bradford**, on the relation between the occlusive power of palladium for hydrogen and its activity for catalytic hydrogenation, *T.*, 1280.
- Mayer, S.** See *Yasuhiko Asahina*.
- Mayer, André, H. Magne, and L. Plantefol**, the toxicity of the chloromethyl carbonates and chloroformates, *A.*, i, 147.
- Mayer, André, L. Plantefol, and Fred. Vies**, poisoning by nitrohalogenated methanes, *A.*, i, 147.
- Mayer, (Mlle.) Anka.** See *Maximilian Samec*.
- Mayer, Fritz, and August Bansa**, action of *o*-chlorobenzaldehyde on feebly basic amines, particularly those of the naphthalene series; constitution of derivatives of naphthalene, *A.*, i, 175.
- Mayer, Fritz, and Karl Freitag**, constitution of fluoranthene; syntheses of isodiphenic acid and fluorenone-1-carboxylic acid, *A.*, i, 248.
- Mayer, Fritz, and Adolf Sieglitz** [with *Willy Ludwig*], isomerisation of 1-phenylindene during pyrogenic distillation (a new hydrocarbon), *A.*, i, 554.
- Mayer, Hans Ferd.**, relation of molecules to slow free electrons, *A.*, ii, 234.
- Mayer, Martin, and Heinz Leiss**, experiments with a new trypanocidal agent ("Bayer 205") on trypanosomes pathogenic to man and to animals, *A.*, i, 908.
- Mazé, Pierre**, the assimilation of carbon dioxide by green plants, *A.*, i, 151, 209.
- Mazuir, A.**, nickel plating of aluminium, *A.*, ii, 50.
- Mazzetti, C.**, double ternary systems with miscibility gaps in the liquid and solid states. I. and II., *A.*, ii, 29.
- Mazzetti, C.** See also *Nicola Parravano*.
- Means, J. H.** See *L. W. Smith*.
- Meer, C. N. van der.** See *J. Tenminck Groll*.
- Moggers, W. F.** See *C. C. Kiess and F. L. Mohler*.
- Meier, Klahilde.** See *Hermann Straub*.
- Meincke, Peter.** See *Gustav Emden*.
- Meisenheimer, Jakob**, connexion between the colour of chemical compounds and the structure of the molecule, *A.*, ii, 364.
- Meisenheimer, Jakob, Eugen von Budkewicz, and Georg Kananow**, di- and tri-phenylmethane series. I. *p*-Alkylaminobenzophenones, *A.*, i, 356.
- Meisenheimer, Jakob, Eugen von Budkewicz, Georg Kananow, and Julius Neresheimer**, di- and tri-phenylmethane series. II. Unsymmetrical leuco-bases of the malachite-green and crystal-violet series, *A.*, i, 353.
- Meisenheimer, Jakob, and Johannes Casper**, constitution of Grignard's magnesium compounds, *A.*, i, 654.
- Meisenheimer, Jakob, and Julius Neresheimer**, di- and tri-phenylmethane series. III. Attempts to prepare optically active leuco-bases of tri-phenylmethane colouring matters, *A.*, i, 359.
- Meisenheimer, Jakob, and Bruno Wieger**, 1-vinylbenzimidazole, *A.*, i, 739.
- Meissner, Karl Leo.** See *William Minot Guertler*.
- Meissner, K. W.**, Bergmann series of caesium, *A.*, ii, 565.
- Meissner, Walther**, thermal and electrical conductivity of lithium between 20° and 373° absolute, *A.*, ii, 151.
- thermal and electric conductivities of metals, *A.*, ii, 480.
- Meitner, Lise**, different modes of radioactive disintegration and the possibility of [indicating] their significance from the nuclear structure, *A.*, ii, 293.
- Meitner, Lise.** See also *Otto Hahn*.
- Melander, K. H. A.**, lignin substance, *A.*, i, 849.
- Melber, Walter Wolfgang.** See *Karl Fleischer*.
- Meldolesi, Gino.** See *Sigmund Fränkel*.
- Meldrum, Andrew Norman.** See *Rupchand Litarum Alimchandani*.
- Mellanby, John, and C. J. Thomas**, carbon dioxide carrying power of the constituents of plasma; the alkali reserve of blood, *A.*, i, 142.
- Mellenheim, Julius Mell von.** See *Albert Klauber*.
- Menaul, Paul**, formation of hydrocyanic acid in plants, *A.*, i, 484.
- modification of the van Slyke method of protein analysis, *A.*, ii, 472.
- Menaul, Paul.** See also *Carr T. Dowell*.
- Menzies, Alan Wilfrid Cranbrook**, a method of measuring low vapour pressures, with its application to the case of 2:4:6-trinitrotoluene, *A.*, ii, 17.
- explanation of an apparent anomaly outstanding in the results of measurement of dissociation pressures, *A.*, ii, 304.
- molecular state of water vapour, *A.*, ii, 381.
- a differential thermometer, *A.*, ii, 622.

- Menzies, Alan Wilfrid Cranbrook**, and **Sidney L. Wright**, applications of a differential thermometer in ebullioscopy, A., ii, 622.
- Merck, E.**, preparation of *n*-acylalkyl-homopiperonylamines, A., i, 341.
formyl derivatives of secondary bases, A., i, 591.
- Merica, P. D.**, physical properties of nickel, A., ii, 117.
- Merkel, Paula**. See **Otto Fischer**.
- Merkel, P. P.** See **Paul H. M.-P. Brinton**.
- Merton, Thomas Ralph**, effect of concentration on the spectra of luminous gases, A., ii, 2.
spectrophotometry in the visible and ultra-violet spectrum, A., ii, 287.
spectra of lead isotopes, A., ii, 611.
- Mertz, Albrecht**, micro-estimation of dextrose by Bang's method, A., ii, 67.
- Merwin, Herbert Eugene**. See **Eugen Ponnjak**, and **Henry Stephens Washington**.
- Messmer, Ernst**. See **Kurt Hess**.
- Mestrezat, W.**, Poirrier's blue C4B as an indicator, A., ii, 515.
- Mestrezat, W.**, and (*Mlle.*) **Marthe Paul Janet**, presence in urine of nitrogen not determined by the Kjeldahl method, A., i, 477.
the comparative estimation of the total nitrogen in urine by the methods of Dumas and Kjeldahl, A., ii, 58.
nitrogen titratable by the Kjeldahl method, A., ii, 411.
- Mestrezat, W.**, and (*Mlle.*) **S. Ledebt**, the compensating rôle of chlorides in their relationships with the chemical composition of humours, A., i, 634.
- Metcalf, E. Parr**, and **E. Venkatesachar**, absorption of light by electrically luminescent mercury vapour, A., ii, 689.
- Meunier, Jean**, principles of analysis by means of reducing flames; detection of traces of manganese in the presence of iron or other substances, A., ii, 351.
- Meunier, Louis**, action of sodium carbonate on chrome alum solutions, A., ii, 405.
- Meunier, Louis**, and **P. Caste**, action of sodium carbonate on solutions of chrome alum, A., ii, 512.
- Mouries, R.**, volumetric estimation of iron in the presence of a large quantity of hydrochloric acid, A., ii, 218.
volumetric estimation of arsenious compounds by means of potassium dichromate, A., ii, 347.
- Meyer, Ernst**. See **Bruno Emmert**.
- Meyer, Friedrich**, and **H. G. Kesaler**, preparation of chlorine heptoxide, A., ii, 326.
- Meyer, Friedrich**, and **W. Sandow**, preparation of fluorine from molten potassium hydrogen fluoride, A., ii, 398.
- Meyer, Friedrich**, and **R. Zappner**, preparation of boron by the dissociation of boron bromide, A., ii, 328.
the preparation of considerable quantities of pure boron nitride, A., ii, 329.
- Meyer, G.**, critical temperature of mercury, A., ii, 238.
- Meyer, Gustave Morris**. See **Thobas A. Levene**.
- Meyer, Hans**, and **Alice Hofmann-Meyer**, pyro-condensations in the pyridine series, A., i, 739.
- Meyer, Heinrich F. W.** See **Wilhelm Schneider**.
- Meyer, Jules**. See **Leopold Ruzicka**.
- Meyer, Julius**, the alkali cyanides, A., i, 501.
- Meyer, Julius**, and **Hanns Moldenhauer**, the preparation of selenic acid, A., ii, 503.
- Meyer, Julius**, and **Robert Nerlich**, trivalent manganese, A., ii, 509.
- Meyer, Julius**. See also **Walter Herz**.
- Meyer, Kurt Heinrich** [with **Heinrich Hopff**, and **Walter Felix**], substitution processes, A., i, 855.
- Meyer, Kurt Heinrich**, and **W. E. Elbers**, action of nitric acid on phenols and phenol ethers, A., i, 240.
- Meyer, Kurt Heinrich**, and **Hans Gottlieb-Billroth**, keto-enolic desmotropy. XIII. Triphenylvinyl alcohol and 9-benzoylfluorene, A., i, 422.
- Meyer, Kurt Heinrich**, and **Heinrich Hopff**, keto-enolic desmotropy. XIV. Preparation of the enolic forms of ethyl acetoacetate and acetylacetone, A., i, 291.
the constitution of hydrocyanic acid, A., i, 776.
dimethylvinylamine, A., i, 851.
- Meyer, Kurt Heinrich**, and **Endrey Orthner**, synthesis of formamide from carbon monoxide and ammonia, A., i, 775.
- Meyer, Kurt Heinrich**, and **Walter Reppe**, steps in the reduction of aryl derivatives of nitric acid, A., i, 235.
- Meyer, Kurt Heinrich**, and **Hans Tochtermann**, the coupling of benzenoid hydrocarbons with diazo-compounds, A., i, 893.

- Meyer, Richard**, Martin Heinrich Klaproth, A., ii, 195.
- Meyer, Richard, Wilhelm Meyer**, and **Karl Taseger**, attempted synthesis of a hydrocarbon, $C_{14}H_{10}$, A., i, 20.
- Meyer, Stefan**, rate of decay of actinium and the transformation relationships of the actinium series, A., ii, 8.
- the question of the existence of isotopes with the same atomic weight, A., ii, 78.
- radioactive constants according to the position in 1920, A., ii, 235.
- Meyer, Wilhelm**. See **Richard Meyer**.
- Meyerhof, Otto**, the transformation of energy in the muscle. I. The relation of lactic acid to the heat production and to the performance of work in the muscle in anaerobiosis, A., i, 76.
- the transformation of energy in the muscle. II. The fate of lactic acid during the recovery period of the muscle, A., i, 76.
- Meysenburg, L. von**, and **G. F. McCann**, the diffusible calcium of the blood serum. II. Human rickets and experimental dog tetany, A., i, 753.
- Meysenburg, L. von**, **A. M. Pappenheimer**, **T. F. Zucker**, and **M. F. Murray**, the diffusible calcium of the blood serum. I. Estimation, A., i, 753.
- Michael, Arthur**, the structures and reactions of hydroxylamine and its derivatives, A., ii, 328.
- Michael, Wilhelm**. See **Richard Lorenz**.
- Michaelis, Leonor**, the importance of the gastric hydrochloric acid, A., i, 74.
- the theory of invertase action, A., i, 468.
- Michaelis, Leonor**, and **A. Gyemant**, the estimation of the hydrogen-ion concentration by means of indicators, A., ii, 56.
- Michaelis, Leonor**, and **C. Timénez-Diaz**, ionic synergism. I. Experiments with congo-rubin, A., ii, 682.
- Michalik, Rudolf**. See **Amantius Hahn**.
- Michel, Edoard**. See **Fritz Ephraim**.
- Middleton, Edmund Burrus**. See **Harry E. Weiser**, and **Frank C. Whitmore**.
- Middleton, Howard E.** See **Charles J. Moore**.
- Miekeley, Artur**. See **Max Bergmann**.
- Mielenz, W.**, and **H. von Wartenberg**, the heats of formation of glucinum oxide and chloride, A., ii, 437.
- Mignonnac, Georges**, the catalytic hydrogenation of hydrobenzamide; method of preparation of benzylamine, A., i, 129.
- new general method of preparation of amines from aldehydes or ketones, A., i, 165.
- Mignonnac, Georges**. See also **Charles Moureu**.
- Miholić, Stanko S.**, the reaction of sodium salts with uranyl acetate alone and in the presence of salts of magnesium, zinc, cadmium, and glucinum, A., i, 219.
- Mikeska, Louis A.**, the preparation of 4-methylquinoline and related bases, A., i, 54.
- Mikeska, Louis A.**, and **Elliot Quincy Adams**, tetramethylquinolines, A., i, 54.
- Mikeska, Louis A.**, **Herbert L. Haller**, and **Elliot Quincy Adams**, synthesis of photosensitising dyes. II. Dicyanine "A," A., i, 54.
- Mikeska, Louis A.** See also **Treat Baldwin Johnson**, and **Phobus A. Levene**.
- Milbauer, Jaroslav**, and **J. Pazourek**, oxidation of sulphites in concentrated solutions, A., ii, 635.
- Milde, E.** See **Fritz Arndt**.
- Miller, C. W.**, and **J. E. Sweet**, a possible source of error in testing for Bence-Jones protein, A., ii, 720.
- Miller, E. B.**, the use of silica gel as an adsorbent for vapours, A., ii, 169.
- Miller, E. J.**, and **Charles S. Robinson**, the acid amide fraction of the nitrogen of peat, A., ii, 713.
- Miller, Emerson Romeo**, dihydroxyphenylalanine, a constituent of the velvet bean, A., i, 84.
- Miller, Elisabeth W.**, the effect of cooking on the water-soluble vitamins in carrots and navy beans, A., i, 85.
- Miller, George E.** See **John W. E. Glattfeld**.
- Miller, Harry G.**, distribution of nitrogen in lucerne seed, A., i, 486.
- the relation of sulphates to plant growth and composition, A., i, 911.
- Milligan, C. H.** See **John W. E. Glattfeld**.
- Millikan, Robert Andrews**, extension of the ultra-violet spectrum, A., ii, 3.
- Millikan, Robert Andrews**, **J. S. Bowen**, and **R. A. Sawyer**, vacuum spark spectra in the extreme ultra-violet of carbon, iron, and nickel, A., ii, 609.

- Millosevich, Federico**, paternoite, a new mineral of the saliferous stratum of Monte Sambuco in the Calasci-betta region (Sicily), A., ii, 54.
minerals of Lazio; mellilite of inclusions in Peperino, A., ii, 343.
- Mills, Edmund James**, obituary notice of, T., 2130.
- Mills, William Hobson, John Edmund Guy Harris, and Herbert Lambourne**, the Doebner-Miller quinaldine synthesis, T., 1294.
- Mills, William Hobson, and Charles Reynolds Nodder**, the optically active forms of the ketodilactone of benzo-phenone-2:4:2':4'-tetracarboxylic acid, T., 2094.
- Minot, Annie S.** See **Clarence K. Reiman**.
- Minovici, Stefan**, the resolution of aminophenylacetic acid into its optically active compounds, A., i, 244.
- Minovici, Stefan, and Al. Ionescu**, detection and estimation of potassium as picrate, A., ii, 520.
- Minovici, Stefan, and Constantin Kollo**, volumetric estimation of potassium, A., ii, 520.
- Minovici, Stefan, and V. Thüringer**, a lacticonic derivative of aminophenylacetic acid, A., i, 272.
- Miranda, D. de, and A. E. Roest van Limburg**, iodometric estimations by Stortebeker's method, A., ii, 516.
- Miranda, Marcel**, seeds of the Papilionaceae family with hydrosulphide autofermentation, A., i, 486.
extraction and nature of the hydrosulphide compound in the seeds of certain Papilionaceae, A., i, 759.
- Mirasol, Jose Jison**, aluminium as a factor in soil acidity, A., i, 88.
- Misson, G.**, colorimetric estimation of sulphur in cast-iron and steel, A., ii, 556.
- Mitchell, Alec Duncan**, studies on hypophosphorous acid. III. Its reaction with mercuric chloride, T., 1266.
- Mitchell, Philip P., and J. Walter Wilson**, the selective absorption of potassium by animal cells. I. Conditions controlling absorption and retention of potassium, A., i, 830.
- Mitra, Masaturo**. See **Sylvester Solomon Zilva**.
- Miyamoto, Nobu**. See **Shuzo Kozawa**.
- Moeller, W.**, tanning (hardening) of gelatin by formaldehyde, A., i, 693.
adsorption of formaldehyde by animal charcoal, A., ii, 304.
- Moerk, Frank**, methyl-orange as an indicator in the presence of indigo carmine, A., ii, 705.
- Moers, Kiert**, investigations on the salt character of lithium hydride, A., ii, 200.
- Moesveld, A. L. Th.** See **Ernst Cohen**.
- Mohler, F. L., and Paul D. Foote**, ionisation and resonance potentials of some non-metallic elements, A., ii, 368.
soft characteristic X-rays from arcs in gases and vapours, A., ii, 570.
- Mohler, F. L., Paul D. Foote, and W. F. Meggers**, resonance potentials and low-voltage arcs for metals of the second group of the periodic table, A., ii, 8.
- Moir, James**, the calculation of the colour of "cyclic" coloured substances, T., 1654.
colour and chemical constitution. X. A general numerical solution of the colour-constitution problem, A., ii, 6.
estimation of nitrous fumes in air, with special reference to fuse-igniters, A., ii, 345.
colour and chemical constitution. XI. A systematic study of the brominated phenolphthaleins regarding the relation between position and colour, A., ii, 365.
colour and chemical constitution. XII. Calculation of colour from the tautomeric theory, A., ii, 475.
permanganate absorption spectrum; claim for priority; formula for calculating the uranium spectrum, A., ii, 670.
- Moissonnier, (Mlle.) S.** See **P. Carnot**.
- Molander, Gösta, d-lupanine, C₂₁H₄₃O₉**, A., i, 886.
- Moldánke, Karl**. See **Julius von Brann**.
- Moldenhauer, Hauns**. See **Julius Meyer**.
- Moles, Enrique, and T. Batuecas**, numerical revision of the results connected with the density of methyl fluoride: atomic weight of fluorine, A., i, 389.
- Moles, Enrique, and F. Gonzalez**, new revision of the density of oxygen gas, A., ii, 546.
- Moles, Enrique, and R. Izaguirre**, copper-cyanogen compounds, A., i, 322.
- Molisch, Hans**, microchemistry of plants. XIV. Blueing of plant ash by zinc chloro-iodide. XV. Separation of fat drops on the fruit of an apple (*Malus coriarius*), A., i, 213.

- Mollard, Maria**, influence of sodium chloride on the development of *Sterigmatocystis nigra* (*Aspergillus niger*), A., i, 481.
- Moncada, C.** See *Guido Bargellini*.
- Monier-Williams, Gordon Wigham**, the hydrolysis of cotton cellulose, T., 803.
- measurement of hydrogen-ion concentration, A., ii, 650.
- Monroe, Kenneth Potter.** See *James Kendall*.
- Montagne, (Mlle.).** See *Ernest Fournneau*, and *José Puyal*.
- Montagne, Pieter**, the relative mobility of atoms and groups in organic compounds, A., i, 89.
- the influence of carbon disulphide in the Friedel-Crafts' synthesis, A., i, 348.
- Moog, R.** See *Alexandre Desgrez*.
- Moore, Benjamin**, photo-synthetic processes in the air, upon the land, and in the sea in relation to the origin and continuance of life on the earth, T., 1555.
- Moore, Benjamin, Edward Whitley, and T. Arthur Webster**, photo-synthesis in marine algae. I. Fixation of carbon and nitrogen from inorganic sources in sea water. II. Increase of alkalinity of sea water as a measure of photo-synthesis, A., i, 211.
- Moore, Charles J., William H. Fry, and Howard E. Middleton**, methods for estimating the amount of colloidal material in soils, A., ii, 608.
- Moore, H. C., and R. D. Caldwell**, estimation of potassium by the Lindo-Cladding method, A., ii, 132.
- Moore, Neil Preston**, comparative study of fractionating still-heads, A., ii, 433.
- Moore, Neil Preston.** See also *Stewart Woodford Young*.
- Moore, Tom Sidney**, reduction of aromatic azo-compounds and nitro-compounds, A., i, 742.
- Moore, Tom Sidney, and (Miss) Ida Doubleday**, some new tricyclic bases, T., 1170.
- Moore, Tom Sidney, (Miss) Muriel Treagarten Marrack, and (Miss) Annie Kathleen Proud**, the application of Hofmann's reaction to substituted phthalimides, T., 1786.
- Moore, William C.**, zinc electrode, A., ii, 236.
- Moormann, T. A.** See *Junius David Edwards*.
- Morel, Henri**, present state of the nucleic acid question, A., i, 641.
- Morel, Jules.** See *Paul Wenger*.
- Morgan, Gilbert Thomas, and Henry Burgess**, non-aromatic diazonium salts. VI. 3:5-Dimethylisoxazole-4-diazonium salts and their azo-derivatives, T., 697.
- non-aromatic diazonium salts. VII. The diazo-reaction in the isoxazole series, T., 1546.
- Morgan, Gilbert Thomas, and William Arthur Percival Challenor** [with *Frank Raymond Jones*] *o*-chlorodinitrotoluenes. III. Bases derived from 2-chloro-4:5-dinitrotoluene, T., 1537.
- Morgan, Gilbert Thomas, and Harry Douglas Keith Drew**, researches on residual affinity and co-ordination. III. Reactions of selenium and tellurium acetylacetones, T., 610.
- researches on residual affinity and co-ordination. V. Gallium acetylacetone and its analogues, T., 1058.
- Morgan, Gilbert Thomas, and Thomas Glover**, *o*-chlorodinitrotoluenes. IV. 2-Chloro-3:4-dinitrotoluene, T., 1700.
- Morgan, Gilbert Thomas, and William Robinson Grist**, arylsulphonylaphthylenediamines and their sulphonic acids, T., 602.
- Morgan, Gilbert Thomas, and Wilfred John Hickinbottom**, studies in the *n*-butyl series. I. Aryl *n*-propyl ketones, T., 1879.
- Morgan, Gilbert Thomas, and Leslie Aniel Jones**, *o*-chlorodinitrotoluenes. II., T., 187.
- Morgan, Gilbert Thomas, and J. D. Main Smith**, researches on residual affinity and co-ordination. IV. The constitution of simple and complex cobaltic quinoneoxime lakes, T., 704.
- researches on residual affinity and co-ordination. VI. Selenodithionie acid and its metallic salts, T., 1066.
- Morgan, Gilbert Thomas, and Dudley Cloete Vining**, dihydroxynaphthaldehydes, T., 177.
- dinaphtha-1:7:1':5'-diquinone, T., 1707.
- Morgan, Gilbert Thomas, and (Miss) Dorothy Webster**, diazo-derivatives of 4'-amino-1-phenyl-5-methylbenzothiazole (dehydrothio-*p*-toluidine), T., 1070.
- Morgan, John David, and Richard Verana Wheeler**, phenomena of the ignition of gaseous mixtures by induction coil sparks, T., 239.
- Morgan, Jerome J.**, new method for the estimation of potassium in silicates, A., ii, 349.

- Morgan, Jerome J.** See also *Daniel Jackson*.
- Morgenroth, Julius**, anæsthetic action of anæsthesin [ethyl *p*-aminobenzoate] and some of its derivatives, A., i, 384.
- Morgulis, Sergius**, the catalase reaction, A., i, 751.
- Morgulis, Sergius**, and *V. E. Levine*, decomposition of hydrogen peroxide by organic compounds and its bearing on the catalase reaction, A., i, 17.
- Morris, R. Leitch**, volumetric estimation of arsenic acid and arsenates, A., ii, 519.
- Morse, W.**, is glycogen the source of the acids developed in autolysis? A., i, 906.
- Moser, Eduard**, simple electric heater for the evaporation of liquids, A., ii, 15.
- Moser, Ludwig**, and *Th. Kittl*, use of hypophosphorous acid in gravimetric analysis; estimation of silver and its separation from lead and other metals, A., ii, 521.
- Moser, Ludwig**, and *Anna Schattner*, estimation of metal sulphides by heating in hydrogen sulphide. 1., A., ii, 558.
- Mosimann, Paul**. See *Fritz Ephraim*.
- Motigase, Seizō**. See *Yashiko Asahina*.
- Motz, Robert**. See *Emil Knoevenagel*.
- Mouret, (Mlle.)**, and *J. Barlot*, quantitative separation of tin and antimony in the presence of phosphoric acid, A., ii, 597.
- Moureu, Charles**, and *Augustin Boutaric*, some physico-chemical constants of acrylic acid, A., i, 390.
- Moureu, Charles**, *Augustin Boutaric*, and *Charles Dufraisse*, some physico-chemical constants of acetaldehyde, A., i, 395.
- Moureu, Charles**, and *Ralph L. Brown*, some propionitriles with mixed function, A., i, 101.
- Moureu, Charles**, *Charles Dufraisse*, *Adolphe Lepape*, *Paul Robin*, *Jean Pongnet*, *Augustin Boutaric*, and *Etienne Boismen*, acetaldehyde, A., i, 395.
- Moureu, Charles**, and *Adolphe Lepape*, the rare gases of the natural gases of Alsace-Lorraine, A., ii, 44.
- Moureu, Charles**, and *Georges Mignonac*, the ketimides, A., i, 108.
- the dehydrogenation of alcohols by catalytic oxidation, A., i, 218.
- Moureu, Charles**, and *Marcel Murat*, action of thiodiglycol [$\beta\beta'$ -dihydroxy-diethyl sulphide] on silver salts, A., i, 90.
- Moureu, Charles**, *Marcel Murat*, and *Louis Tampier*, some derivatives of crotonaldehyde, A., i, 160.
- acrylic acid and acrylic esters; halogenated propionic acids and esters, A., i, 495, 536.
- Moyle, Dorothy Mary**. See *Dorothy Lillian Foster*.
- Mroziński, W.** See *Antoine Korczyński*.
- Mudge, William A.** See *Harold A. Fales*.
- Mügge, O.**, formation and stability of modifications of polymorphous substances below their transition temperature, A., ii, 576.
- Müller, Alex.**, X-ray bulb with liquid mercury anticathode and wave-length measurements of the L-spectrum of mercury, A., ii, 569.
- Müller, Arno**, the condensation of formaldehyde with acetone, A., i, 542.
- synthesis of alkylarylmethanes from ketones and phenols, A., i, 656.
- a new case of anisotropy in melting point, A., i, 674.
- benzylidenecarvone, A., i, 675.
- optical investigations in the chemistry of the terpenes. 1., A., i, 678.
- Müller, Erich**, solubility of cupric hydroxide in concentrated sodium hydroxide solution, A., ii, 113.
- Müller, Erich** [with *(Frl.) Ilse Ernst*], sodium cuprite, A., ii, 552.
- Müller, Erich**, and *Antonio Rius y Miró*, the electrolytic oxidation of methyl and ethyl alcohols in alkaline solution; the electrolytic formation of methane, A., i, 218.
- Müller, Ernst**, and *Leonhard Herrdgen*, action of anhydrous hydrazine on nitriles, A., i, 741.
- Müller, Franz**. See *Fritz Ephraim*.
- Müller, J.** See *F. Lenze*.
- Müller, Johannes**. See *Wilhelm Steinkopf*.
- Müller, John H.**, atomic weight of germanium, A., ii, 456.
- Müller, R.** See *Otto Fischer*.
- Müller, Rudolf**, conditions for the precipitation of the Wassermann reaction antigen (heart extract), A., i, 830.
- Müller, Wilhelm**. See *Ernst Berl*.
- Müller, Wolf Johannes**. See *Johann Georg Koenigsberger*.
- Münch, Siegmund**, fusion of carbon, A., ii, 586.
- Münz, E.**, physiology of methane bacteria, A., i, 909.
- Mugdan, Susanne**. See *Otto Ruff*.
- Muguet, A.**, and *J. Seroin*, the age of the antunes of Portugal, A., ii, 55.

- Muhlert, *F.*, estimation of sodium nitrite, A., ii, 594.
 estimation of alkali hydroxide and carbonate in presence of cyanide and ferrocyanide, A., ii, 595.
 Mahry, *Grete*. See *Anton Skrabal*.
 Makai, *Genko*, removal of protein from body fluids for the purpose of simultaneous estimation of many constituents, A., ii, 593.
 Mullaly, *John Mylne*. See *Dalziel Dewelllyn Hammick*.
 Muller, *Joseph Auguste*, and (*Mlle.*) *Eglantine Peytral*, the sudden pyrogenic decomposition of formic acid and the preparation of carbon monoxide, A., i, 156.
 Muller, *P.*, estimation of citric-soluble phosphate in superphosphate, A., ii, 275.
 Muller, *P.* See also *Hijmans van den Bergh*.
 Malthaupt, *R.* See *M. Kochmann*.
 Mamm, *Otto*, and *Wilhelm Beth*, partial hydrogenation of pyridinecarboxylic esters, A., i, 686.
 Mumm, *Otto*, and *Otto Bohme*, syntheses of certain carboxylic and ketocarboxylic acids of pyridine, A., i, 439.
 Munroe, *Charles E.*, and *Spencer P. Howell*, products of detonation of trinitrotoluene, A., i, 18.
 Murskani, *Takejirô*, equilibrium diagram of the system, silicon-iron, A., ii, 589.
 Murskani, *Takejirô*. See also *Kôtarô Honda*.
 Murat, *Marcel*. See *Charles Moureu*.
 Murayama, *Yoshiatsu*, the essential oil of *Mosla japonica*, Maxim, A., i, 875.
 occurrence of moslene in essential oils containing *p*-cymene, A., i, 876.
 Murayama, *Yoshiharu*, and *Shinjiro Aoyama*, constituents of the Japanese common earth-worm, A., i, 477.
 Murayama, *Yoshiharu*, and *Takcki Itagaki*, constituents of the root of *gishi-gishi*, A., i, 760.
 Murray, *C. D.* See *A. Baird Hastings*.
 Murray, *H. A., jun.* See *A. Baird Hastings*.
 Murray, *M. F.* See *L. von Meysenbug*.
 Murschhauser, *Hans*, mutarotation of dextrose in solutions of secondary sodium phosphate, A., i, 10.
 optical rotation of dextrose under the influence of hydrochloric acid. II. The change of rotatory power and reducing capacity of dextrose solutions in hydrochloric acid at 100°, A., i, 765.
 Murschhauser, *Hans*, the quantitative estimation of dextrose and levulose in a solution, A., ii, 715.
 Mutscheller, *Arthur*, colloidal adsorption, A., ii, 26.
 Myers, *Chester Newton*, metal salts of thioglycollic [α -thiolacetic] acid, A., i, 843.
 Myers, *Victor Caryl*, and *Hilda M. Croil*, estimation of carbohydrates in vegetable foods, A., ii, 465.
 Myers, *Victor Caryl*, and *James J. Short*, the potassium content of human blood, A., i, 525.
 the potassium content of normal and some pathological human bloods, A., i, 823.
 Mylius, *Franz*, and *Werner Mylius*, the purification and testing of aluminium, A., ii, 204.
 Mylius, *Werner*. See *Franz Mylius*.
- N.
- Nägeli, *A.* See *Volkmar Kohlschütter*.
 Nägeli, *C.* See *P. Karrer*.
 Nagai, *Shôichirô*, geometrical isomerism of *isosaftrole*, A., i, 857.
 Nagayama, *T.*, activity of the kidneys and acidic basic equilibrium, A., i, 205.
 elimination of urea and of phosphates by the kidneys, A., i, 205.
 the decomposition of pyruvic acid by various fungi, A., i, 836.
 Nagel, *David Henry*, obituary notice of, T., 551.
 Naik, *Kuverji Gosai*, the formation and properties of dithio-ketones ($R_2C:S:S$) and dithio-ethers ($R_2S:S$). I. and II., T., 379, 1231.
 interaction of sulphur monochloride and organic acid amides, T., 1166.
 Nakao, *Manzô*, a Chinese drug "shê-chuang-tzu," A., i, 87.
 Nakazawa, *Tadasu*. See *Motooki Matsui*.
 Nakazono, *Tsunaki*, application of amalgams in volumetric analysis. I. estimation of molybdenum, titanium, and iron, A., ii, 596.
 application of amalgams in volumetric analyses. II. Estimation of vanadium and uranium, A., ii, 714.
 Nanji, *Dinshaw Ruttonji*. See *Arthur Robert Ling*.
 Nannei, *Bianco*, action of light on the thermal conductivity of selenium, A., ii, 162.
 Narbutt, *J.*, approximate calculation of the latent heat of fusion of the liquefied inactive gases, A., ii, 163.

- Nathansohn, Alexander.** See **Herbert Freundlich**.
- Nedzati, F.** See **A. Schönberg**.
- Negelsin, Erwin.** See **Otto Warburg**.
- Neker, P.** See **Karl Elbs**.
- Neidig, Ray E., and Robert S. Snyder,** the application of the van Slyke method to hydrolysed protein extracts of silage crops, A., i, 488.
- Nelsh, Arthur C., and J. W. Burns,** the precipitation of some of the rare earths by creasins of insoluble oxides and carbonates, based on the principle of hydrolysis, A., ii, 560.
- Nelken, Annemarie.** See **Ernst Weitz**.
- Nelson, O. A.** See **George Augustus Hulett**.
- Nelson, Victor E., Ellis I. Fulmer, and Ruth Cessna,** nutritional requirements of yeast. III. Synthesis of water-soluble-B, A., i, 386.
- Nelson, Victor E.** See also **Ellis I. Fulmer**.
- Némec, Antonín,** the presence of uricase in the plant organism, A., i, 213.
- Némec, Antonín, and Václav Kás,** the influence of selenium on the development of some moulds belonging to the *Penicillium* genus, A., i, 294.
- Neresheimer, Julius.** See **Jakob Meisenheimer**.
- Nerlich, Robert.** See **Julius Meyer**.
- Nesti, A.** See **Guattiero Poma**.
- Neu, Wilhelm.** See **Richard Lorenz**.
- Neuberg, Carl, and Julius Hirsch,** carb-oligase; a ferment linking carbon chains, A., i, 480.
- Neuberg, Carl, F. F. Nord, and E. Wolff,** acetaldehyde as an intermediate product in the fermentation of sugar by *Bacillus lactis aerogenes*, A., i, 148.
- Neuberg, Carl, and Marta Sandberg,** chemically defined catalysts in alcoholic fermentation, A., i, 82.
- Neuberg, Carl, and Werner Ursam,** the third form of fermentation of sugar as a general consequence of the dismutation influence of inorganic and organic "alkalisers," A., i, 81.
- Neuberg, Carl.** See also **E. Färber**.
- Neuburger, M. C.,** origin of uranium- Z_2 (uranium-Z), A., ii, 479.
- Neuburger, M. C.,** nomenclature of the radioactive families, A., ii, 676.
- Neumann, Bernhard** [with **Walter Gellendien**], decomposition of ammonium carbonate with calcium sulphate, A., ii, 587.
- Neumann, Bernhard** [with **Gertrud Kotyga**], decomposition of calcium sulphate by ammonium hydroxide, A., ii, 587.
- Neumann, Bernhard, and Ernst Karwat,** the preparation of sodium hydroxide from sodium sulphate, A., ii, 333.
- Neuschloss, S. M.,** antagonistic action between ions of similar charge, A., i, 148.
- Neuschloss, S. M.** See also **Heinrich Bechhold**.
- Newbery, Edgar,** chlorine overvoltages, T., 477.
- Newman, F. H.,** absorption of gases in the electric discharge tube, A., ii, 295.
- Ney, O.** See **Alexander Classen**.
- Nieloux, Maurice,** estimation of carbon monoxide in the blood, and determination of the maximum absorption of carbon monoxide by the blood, A., i, 204.
- Nieloux, Maurice,** micro-estimation of carbon monoxide in blood, A., ii, 594.
- Nieloux, Maurice, and Georges Welter,** a micro-method for the estimation of iron in organic combination, A., ii, 528.
- Nicolardot, Paul, and Ch. Coffignier,** the solubility of some new resins, A., i, 876.
- Nicolardot, Paul, and Ch. Coffignier,** the solubility of some resins from Cochinchina, A., i, 876.
- Nicolas, G.,** mechanism of the fertilising action of sulphur, A., i, 214.
- Nicolet, Ben H.,** C_{18} fatty acids. I. The non-identity of eleostearic acid tetrabromide from tung oil with ordinary linolic acid tetrabromide, A., i, 390.
- Nicolet, Ben H., and Joseph J. Pale,** the benzylic acid rearrangement; the non-addition of hydrogen peroxide to diphenylketen, A., i, 418.
- Nierenstein, Maximilian,** the constitution of catechin. III. Synthesis of aacatechin, T., 164.
- Nierenstein, Maximilian, Charles William Spiers, and Arthur Geske,** gallotannin. XII., T., 275.
- Niesemann, H.** See **Th. Sabalsitcha**.
- Nightingale, Donald Archer.** See **British Cellulose and Chemical Mfg. Co., Ltd.**
- Nijk, D. R.,** crystalline acetylphenylurethane, A., i, 23.
- Nishizawa, Yáshichi,** preparation of isoprene from light camphor oil, A., i, 217.
- Nishizawa, Yáshichi,** perilla oil and chamæcyparis (Japanese cedar) oil, A., i, 258.
- Nishizawa, Yáshichi,** coloration of zinc sulphide by the action of light, A., ii, 263.
- Nivière, Jean,** a catalytic method of hydrogenation, A., ii, 391.
- Njegovan, Vladimir,** detection of antimony in presence of tin, A., ii, 562.

- Noack, Kurt**, metabolism of thermophilic fungi, A., i, 294.
- catalytic processes of physiological importance effected by light, A., i, 910.
- Nobécourt, Pierre**, action of some alkaloids on *Botrytis cinerea*, Pers., A., i, 485.
- Nobel, Edmund**. See *Otto von Fürth*.
- Nocentini, Giulio**. See *Umberto Sborgi*.
- Noddack, Walter**, new application of Einstein's photochemical equivalent law, A., ii, 568.
- Nodder, Charles Reynolds**, a convenient form of the periodic classification of the elements, A., ii, 38.
- Nodder, Charles Reynolds**. See also *William Hobson Mills*.
- Nolan, P. J.** See *John Alexander McClelland*.
- Nolf, P.**, preparation of thrombozyme in a state of purity, A., i, 634.
- Nolte, O.**, effect of salt solutions on the soil, A., i, 914.
- estimation of nitrogen in nitrates by Arnd's method, A., ii, 518.
- Nooyen, A. M.**, urson and its distribution in the plant world, A., i, 117.
- Nord, F. F.** See *E. Färber, Carl Neuberg*, and *Aladar Skita*.
- Nordfeldt, E.**, the temperature-coefficient of the decomposition of hydrogen peroxide by fat catalase, A., ii, 36.
- Forris, James Flack**, and *Henry B. Couch*, the condensation of benzoyl chloride with ethylene in the presence of aluminium chloride, A., i, 32.
- Forris, Woodford Stanley Gordon Flucknette**, and *Jocelyn Field Thorpe*, the formation and stability of *spiro*-compounds. V. Derivatives of *cyclohexanespirocyclohexane* and of *cyclopentanespirocyclohexane*, T., 1199.
- Forthrop, John H.**, the significance of the hydrogen-ion concentration for the digestion of proteins by pepsin, A., i, 137.
- comparative hydrolysis of gelatin by pepsin, trypsin, acid, and alkali, A., i, 823.
- the rôle of the activity coefficient of the hydrogen-ion in the hydrolysis of gelatin, A., ii, 541.
- Lowack, Leo**, chemical and galvanic activity boundaries of the copper-nickel, palladium-copper, and palladium-silver mixed crystals, A., ii, 208.
- Loyes, Arthur Amos**, and *Leighton B. Smith*, the dissociation pressures of iron nitrides, A., ii, 304.
- Noyes, Arthur Amos**, and *Leon R. Westbrook*, determination of the vapour pressure of salt hydrate by a distribution-conductivity method, A., ii, 377.
- Noyes, Helen Miller**. See *Herbert Eckweiler*.
- Noyes, William Albert**, the reaction between chlorine and ammonia. III. Probable formation of trichloro-ammonium chloride, A., ii, 42.
- Noyes, William Albert**, and *A. E. Haw*, the reaction between chlorine and ammonia. II., A., ii, 42.
- Noyes, William Albert**. See also *C. W. Colver*, *George E. Gibson*, *Ralph W. Hufford*, and *C. S. Marvel*.
- Noyes, William Albert, jun.** See *Charles Maria*.
- Nuti, Mario**. See *Luigi Rolla*.
- Nye, Lillian L.** See *Martha R. Jones*.

O.

- Oakes, Earle T.** See *Hal Truman Beans*.
- Obrist, Josef**. See *Josef Holluta*.
- Ochi, Shuichirô**, preparation of chloroform from ethyl alcohol and the mechanism of its reaction, A., i, 298.
- O'Connor, Edmund Arthur**, the binary system, aniline-acetic acid, T., 400.
- Oda, Kôji**, hydrogenation of acetylene for the preparation of fuel oils, A., i, 841.
- Oddo, Bernardo**, indole group. VII. Products of the auto-oxidation of indoles, A., i, 127.
- new syntheses in the pyrrole group. XIII. Pyrrolic ketonic acids and dipyrrolyl ketone, A., i, 129.
- Oddo, Giuseppe**, new periodic classification of the elements, A., ii, 102.
- alteration of the basis of the atomic weights and decennial revision of the atomic weight table, A., ii, 691.
- Odén, Sven**, the humus acids, A., i, 393.
- the structure of precipitates, A., ii, 25.
- Odén, Sven**, and *Hugo Andersson*, stoichiometry of adsorption. I. Adsorption of kations of the alkalis and alkaline earths, A., ii, 438.
- Odén, Sven**, and *E. W. Langelius*, stoichiometry of adsorption. II. Adsorption of potassium and barium salts of various anions, A., ii, 625.
- Odling, William**, obituary notice of, T., 553.
- Oelbermann, G.** See *Emil Knoevenagel*.

- Östling, Gustav Jim**, condensation of methylene dicyanide with ketones and aldehydes, A., i, 321.
- tolunaphthol** [β -naphthyl *p*-toluate], A., i, 344.
- spectro-chemistry of cyclobutane derivatives, A., i, 346.
- preparation of glycols corresponding with pinic, norpinic, and *d*-camphoric acids and their derivatives, A., i, 665.
- formation of bicyclic systems with cyclobutane rings, A., i, 665.
- 1:2:2-trimethyl-1:3-dimethanocyclopentane, A., i, 666.
- Ogg, A.**, the crystalline structure of antimony and bismuth, A., ii, 513.
- Ohashi, Ryôichi**, augite from Nishigatake, Japan, A., ii, 407.
- Ohlendorf, Heinrich**. See *Hermann O. L. Fischer*.
- Ohse, Ernst**. See *Erwin Ott*.
- Okumura, Oosaburo**, food plants of Formosa. III., A., i, 88.
- Oldham, John Walter Hyde**. See *James Colquhoun Irvine*.
- Oliveri-Mandalà, E.**, compounds of antipyrine with mercury, A., i, 378.
- azides of thiocarbamic acids, A., i, 900.
- double pyrophosphate of iron and sodium, A., ii, 338.
- decomposition of nitrous acid, A., ii, 346.
- reaction of nitrous acid with hydrazine and with azoimide, A., ii, 694.
- Oliveri-Mandalà, E.**, and *E. Calderaro*, estimation of pyrimidone (4-dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone) in presence of antipyrine (1-phenyl-2:3-dimethyl-5-pyrazolone) and aspirin (*o*-acetoxybenzoic acid), A., ii, 606.
- Olmer, See Derwin**.
- Olmer, L. J.**, vapour pressures of mixtures of 95% ethyl alcohol and ethyl ether, A., i, 534.
- composition of the gaseous phase of ethylalcohol-ethyl ether mixtures in terms of the liquid phase, A., i, 535.
- Olmstead, P. S.** See *Karl T. Compton*.
- Olsson, Urban**, poisoning of amylase by heavy metals and organic substances, A., i, 522.
- Onnes, Heike Kamerlingh**. See *Émile Mathias*.
- Ono, Kashichi**, electrolytic reactions of naphthalene and its derivatives. I. Electrolytic oxidation of naphthalene, A., i, 334.
- electrolytic reactions of naphthalene and its derivatives. II. Electrolytic oxidation of α -naphthol, A., i, 726.
- Onohara, K.**, physico-chemical state of sugar in the blood, A., i, 904.
- Onslow, Herbert**, the stability of tryptophan in baryta hydrolysis, A., i, 693.
- the nature of the substances precipitated by mercuric sulphate from hydrolysed caseinogen, with reference to the estimation and isolation of tryptophan, A., i, 693.
- Onslow, Muriel Wheldale**, oxidising enzymes. IV. Distribution among the higher plants. V. Further observations on the oxidising enzymes of fruits, A., i, 485.
- Opfermann, Gust**. See *Ferdinand Henrich*.
- Oppenheimer, Ernst**, is there a specific action of bromine salts? A., i, 288.
- a new method for the estimation of bromine in very small quantities, A., ii, 273.
- Orékhoft, Alex.**, and *Marc Tiffeneau*, hydrobenzoin and semipinacolic transpositions in the triarylethandiacols with *p*-methoxyl substitution (anisylglycols), A., i, 566.
- Orékhoft, Alex.** See also *Marc Tiffeneau*.
- Orthner, Ludwig**. See *Kurt Heinrich Meyer*.
- Orton, Kennedy Joseph Previté**, and *Mrs. Phyllis Violet McKie*, preparation of chloropierin from picric acid and trinitrotoluenes, T., 28.
- Osaka, Yûkichi**, normalities of standard solutions, A., ii, 124.
- Osaka, Yûkichi**, and *Kinji Andô*, potassium hydrogen oxalate as a standardiser in alkalimetry, A., ii, 132.
- Osakeyhtis, Wäritöläinen**, preparation of *p*-nitrotoluene-*o*-sulphonic acid, A., i, 168.
- Oseacki, Aleksander**, new method for the estimation of uric acid in blood, A., ii, 227.
- Ossart, (Mlle.) E.** See *Albert Berthelot*.
- Osswald, Philipp**. See *Richard Lorenz*.
- Ost, Hermann**, and *R. Bretschneider*, are hydrocelluloses simple substances? A., i, 711.
- Osterberg, A. E.**, and *E. C. Kendall*, preparation of certain derivatives of cyclohexane, A., i, 101.
- the *o*-diethylaminocyclohexanylester of *p*-aminobenzoic acid, A., i, 727.
- Osterberg, Emil**. See *Stanley Rosler Benedict*.
- Osterhout, Winthrop John Vaalcken**, production of aldehyde by chlorophyll and by aniline dyes in the presence of sunlight, A., i, 263.

- Osterhout, *Winthrop John Vanlauren*, and *A. R. C. Haas*, a simple method of measuring photosynthesis, A., i, 295.
- Ostwald, *Wolfgang*, swelling of caoutchouc in various liquids, A., i, 733.
- Ostwald, *Wolfgang*, and *P. Wolski*, dispersoid and colloid chemistry of gypsum. I., A., ii, 47.
- Otsuka, *Ichiro*, the influence of various metallic salts on the formation of bacterial degradation products from amino-acids, A., i, 291.
- Ott, *Erwin*, and *Ernst Ohse*, simple cyanic and cyanuric compounds. II. Cyanuric triazide, C_3N_3 , A., i, 231.
- Ottenslein, *Berta*. See *Siegfried J. Thannhauser*.
- Ottmann, *Walter*. See *Ernst Koenigs*.
- Otto, *Annemaris*. See *Wilhelm Steinkopf*.
- Ouwehand, (*Mlle.*) *P.* See *Jacob Böeseken*.
- Osley, *A. E.*, magnetism and atomic structure. I., A., ii, 82.
- Oyster, *Leone*, and *Homer Adkins*, the preparation of 9(10)-phenanthridone from phenanthrene, A., i, 270.

P.

- Packer, *John*, and *Ian William Wark*, cupritarates, T., 1348.
- Padberg, *C.* See *Peter Lipp*.
- Pados, *Maurizio*, specific heats, A., ii, 15.
- chemico-kinetic study of the velocity of reaction, A., ii, 496.
- Paget, *Humphrey*. See *Thomas Anderson Henry*.
- Palacios, *Julio*, surface tension of mercury in a vacuum, A., ii, 304.
- Palfray, *L.*, the tolyl cyanocampholates and their product of reduction, A., i, 418.
- Palfreman, *H.* See *Norman Victor Sydney Knibbs*.
- Palmer, *Charles Shattuck*. See *Roger Adams*.
- Palmer, *Dorothy Muriel*, and *William George Palmer*, catalytic reduction of ethylene to ethane, A., ii, 541.
- Palmer, *Leroy S.*, and *Cornelia Kennedy*, the relation of plant carotinoids to growth and reproduction of albino rats, A., i, 526.
- Palmer, *William George*, catalytic activity of copper. II., A., ii, 542.
- Palmer, *William George*. See also *Dorothy Muriel Palmer*.
- Palmer, *Walter W.*, *Dana W. Atchley*, and *Robert F. Loeb*, regulation of osmotic pressure. I. The effect of increasing concentrations of gelatin on the conductivity of a sodium chloride solution, A., ii, 534.
- Panajotakos, *Panos*, distribution of phosphoric acid in the thigh muscles of the toad, A., i, 529.
- Paolini, *Vincenzo*, complex salts of mercury with phenols, A., i, 902.
- Pappenheimer, *A. M.* See *A. F. Hess*, and *L. von Meysenbug*.
- Pardee, *J. T.*, *Esper S. Larsen, jun.*, and *George Steiger*, bementite and neotocite from Washington; identity of caryophyllite with bementite, A., ii, 211.
- Pariselle, *H.*, the hydrates of pyridine, A., i, 354.
- the composition of French oil of turpentine and α -pinene bromide, A., i, 574.
- Park, *E. A.* See *Elmer Verner McCollum*.
- Parker, *Albert*. See *Harold Baily Dixon*.
- Parker, *F. W.*, concentration and composition of the soil solution, A., i, 914.
- effect of finely divided material on the freezing points of water, benzene, and nitrobenzene, A., ii, 430.
- Parnas, *Jakob K.*, carbohydrate metabolism of isolated amphibian muscle, A., i, 831.
- the carbohydrate metabolism of isolated amphibian muscle; the exchange in the muscle of pancreas-diabetic animals, A., i, 832.
- mechanical efficiency of the combustion processes occurring in isolated amphibian muscle, A., i, 832.
- Parnas, *Jakob K.*, and *Zofia Krasinska*, the metabolism of amphibian larvae, A., i, 833.
- Parnas, *Jakob K.*, and *Emilia Laska-Mintz*, do subminimal stimuli influence the course of chemical changes in muscle, A., i, 831.
- Parravano, *Nicola*, and *C. Mazzetti*, transformation of light magnesia into the dense form, A., ii, 335.
- Parsons, *J. P.* See *William H. Ross*.
- Parsons, *Leon Woodman*. See *Gregory Paul Baxter*.
- Parsons, *Thomas Richard*, theory of the Barcroft differential blood-gas apparatus, A., i, 632.
- Partington, *James Kildick*, periodic classification of the elements, A., ii, 103.

- Partington, James Riddick**, ratio of the specific heats of air and carbon dioxide, A., ii, 621.
molecular structure and energy, A., ii, 690.
- Partington, James Riddick**, and **D. B. Huntingford**, reduction of osmic acid by fats, A., ii, 514.
- Pascal, Paul**, magnetic properties of the alkaline-earth metals in combination, A., ii, 535.
influence of chemical constitution on the thermal properties of binary mixtures. IV. The constituents of anthracene oils, A., ii, 574.
magnetochemical examination of constitutions in mineral chemistry. I. The sulphur acids, A., ii, 692.
- Pascal, Paul** [with **M. Garnier**], the distillation of nitric acids and of mixtures of sulphuric and nitric acids, A., ii, 504.
- Pascal, Paul** [with **M. Garnier** and **Laboutrasse**], the attack of metals by sulphuric-nitric acid mixtures, A., ii, 585.
- Pascal, Paul, Dupuy, Ero**, and **M. Garnier**, the binary and ternary mixtures obtained in the synthetic manufacture of acetic acid, A., i, 157.
- Paschke, Fritz**, lignin from straw prepared by treatment with alkali carbonate, A., i, 772.
- Passerini, M.**, *p*-isonitriloazobenzene [*p*-carbarylaminazobenzene], A., i, 197.
oxidation of *p*-acetylaminazobenzene, A., i, 624.
isonitriles. I. Compound of *p*-isonitriloazobenzene [*p*-carbarylaminazobenzene], A., i, 743.
isonitriles. II. Compounds with aldehydes or ketones and monobasic organic acids, A., i, 895.
- Passerini, M.** See also **Luigi Alessandri**.
- Passerini, Napoleone**, resistance of the vinegar reel to various agents, A., i, 689.
- Patrick, Walter A.** See **Frederick K. Bell**.
- Fatten, Harrison Eastman**, and **G. H. Mains**, behaviour of neutral ammonium citrate in certain phosphate solutions, A., i, 211.
the hydrogen-ion concentration at which iron is precipitated from hydrochloric acid solution by ammonia, sodium hydroxide, and hydrogen sulphide, A., ii, 218.
- Patterson, R. A.** See **William Duane**.
- Patterson, Thomas Stewart**, and **Andrew McMillan**, the action of ammonia on acetone, T., 269.
- Paul, Ludwig**, liquid crystals of resin soaps, A., i, 427.
- Paul, Theodor**, sweetness of "saccharin" and "dulcin," A., i, 109.
- Pauli, Wolfgang**, the general structure of colloids, A., ii, 246.
- Pauli, Wolfgang**. See also **Mona Adolf**.
- Pauli, W., jun.**, theoretical considerations concerning the diamagnetism of monatomic gases, A., ii, 161.
- Pazourek, J.** See **Jaroslav Milbauer**.
- Pearman, Sydney Albert**, derivatives of *m*-xylene, T., 717.
- Pearson, Constance E.** See **Henry G. Greenish**.
- Pearson, (Mrs.) Leonore Kltz.** See **Arthur Lapworth**.
- Pease, Robert N.**, analysis of molecular volumes from the point of view of the Lewis-Langmuir theory of molecular structure, A., ii, 437.
- Peiser, E.** See **Hermann Staudel**.
- Pélabon, Henri** [**Joseph Léonard Ferdinand**], the resistance of selenium, A., ii, 533.
the electrical resistance of thallium sulphide and selenide, A., ii, 533.
- Pele, Joseph J.** See **Ben H. Nicolet**.
- Pelizzola, C.** See **Giuseppe Bruni**.
- Pelle, C. J.**, an automatic siphon, A., ii, 255.
- Pellizzari, Guido**, synthesis of diglyco-*o*-phenyleneguanidine from *o*-phenylenediamine, A., i, 263.
passage from guanidine to cyanamide and from diguanide to diguanediamide, A., i, 403.
action of cyanogen haloids on phenylhydrazine. V. Melamine derivatives, A., i, 620.
- Pénau, H.** See **Eugène Tassilly**.
- Penfold, Arthur Ramon**, a new pherol in the essential oils of the *Lipp-permum*, A., i, 859.
- Perkin, William Henry, jun.**, the action of sodium on phenyl acetate, T., 125.
- Perkin, William Henry, jun.**, and **Sydney Glenn Preston Plant**, derivatives of tetrahydrocarbazole, T., 185.
- Perkin, William Henry, jun.**, and **Eric Robinson**, studies on the configuration of $\alpha\alpha$ -dibromodibasic acids. I. The dibromoadipic acids; synthesis and resolution of *trans*-cyclopentane-1,2,3-tricarboxylic acid, T., 1392.
- Perkin, William Henry, jun.**, and **Harold Archibald Scarborough**, resolution of *dl-trans*-cyclopentane-1,3,4-tricarboxylic acid, T., 1400.
- Perkin, William Henry, jun.**, and **John Francis Titley**, epicamphor. II, T., 1089.

- Perkin, *William Henry, jun.*, and *Stanley Horwood Tucker*, the oxidation of carbazole, T., 216.
- Perkin, *William Henry, jun.* See also *Robert George Fargher* and *William Ogilvy Kermack*.
- Perman, *Edgar Philip*. See (*Miss*) *Jane Bonnell*.
- Pernot, *J.* See *J. Barlot*.
- Perren, *Edmond Arthur*. See *Christopher Kell Ingold*.
- Perrier, *C.*, presence of zinc in malachite from Chessy, A., ii, 515.
- Perrott, *George St. John*. See *Hugh Stott Taylor*.
- Perucca, *E.*, law of constant proportions and crystalline structure according to W. H. and W. L. Bragg, A., ii, 493.
- Peski, *A. J. van*, the mixed anhydrides of sulphuric acid and carboxylic acids. I. Acetylsulphuric acid, A., i, 392.
- Peters, *John P., jun.*, *David P. Barr*, and *Frances D. Rule*, the carbon dioxide absorption curve and carbon dioxide tension of the blood of normal resting individuals, A., i, 281.
- Peters, *R. A.*, nutrition of protozoa; effect of substituting uranium for potassium in growth media, A., i, 144.
- variations in the resistance of protozoan organisms to toxic agents, A., i, 147.
- substances needed for the growth of a pure culture of *Colpittium colpoda*, A., i, 530.
- Peters, *R. A.* See also *H. Hartridge*.
- Peterson, *W. H.*, and *Helen Churchill*, the carbohydrate content of the navy bean, A., i, 643.
- Peterson, *W. H.*, *Edwin Braun Fred.*, and *J. H. Verhulst*, fermentation process for the production of acetone, alcohol, and volatile acids from maize cobs, A., i, 836.
- Peterson, *W. H.* See also *C. F. Arzberger*.
- Petow, *H.* See *Peter Rona*.
- Pettersson, *A.* See *Hans von Euler*.
- Peytral, (*Mlle.*) *Eglantine*, the method of pyrogenic decomposition, at high temperature, of allyl alcohol, A., i, 156.
- the mode of pyrogenic decomposition, at high temperature, of benzene and benzaldehyde, A., i, 166.
- Peytral, (*Mlle.*) *Eglantine*. See also *Joseph Auguste Muller*.
- Pfaff, *J. K.* See *Robert Pschorr*.
- Pannenstiel, *Adolf*. See *Richard Willstätter*.
- Pfau, *Alexander St.*, the estimation of citronellol by the formylation method, A., ii, 600.
- Pfeiffer, *G.* See *Heinrich Ley*.
- Pfeiffer, *Paul*, the constitution of molecular compounds, A., ii, 501.
- Pfister, *K.*, 5-nitro-6-hydroxy-*m*-toluic acid, A., i, 315.
- Pfeiderer, *Georg*, thermo-elements. I. Thermal and electrical conductivities of copper-phosphorus alloys, A., ii, 298.
- Pfeiderer, *Georg*. See also *Franz Fischer*.
- Phelps, *Isaac King*, the use of permanganate in the Kjeldahl method modified for nitrates, A., ii, 127.
- Phelps, *Isaac King*, and *Herbert Wilkens Daudt*, investigation of the Kjeldahl method for estimating nitrogen, A., ii, 127.
- Philibert, estimation of urea, ammonia, and amino-acids in urine after precipitation of the ammonia, A., ii, 605.
- Philippi, *Ernst*, and *Polara Auslaender*, the dinaphthanthracene series. IV. Bromo-derivatives, A., i, 728.
- Philippi, *Ernst*, *Julie Hannusch*, and *Anton von Wacke*, ring closure with polycarboxylic acids. II. Course of the acidulation of ethanetetra-carboxylic ester, ethanehexacarboxylic ester, and methane-tri- and -tetra-carboxylic esters, A., i, 438.
- Philippi, *Ernst*, and *Gertrud Rie*, new method for the preparation of mellitic acid, A., i, 729.
- Philippi, *Ernst*, and *Richard Saka*, mechanism of the method of Skraup and Priginger for the synthesis of dimethylpyrone, A., i, 429.
- Philippi, *Peter*. See *Friedrich L. Hahn*.
- Philippson, *M.*, and *Germaine Haunsvart*, physiological action of acids and their solubility in lipoids, A., i, 531.
- Phillips, *Max*, alkali fusions. III. Fusion of phenylglycine-*o*-carboxylic acid for the production of indigotin, A., i, 811.
- Phragmén, *Gosta*, catalytic decomposition of hydrogen peroxide, A., ii, 499.
- Piasecki, *S.* See *Antoine Korezyński*.
- Piccard, *Jean*, and *Jean Henri Dardel*, theory of ammonium salts and co-ordination compounds in organic chemistry, A., ii, 394.
- Pickering, *Spencer Percival Umfreville*, obituary notice of, T., 561.
- Pickles, *Albion*, negative adsorption of alkali haloids by wood charcoal, T., 1278.

- Picon, M.**, a new process for preparing sodium derivatives of true acetylenic hydrocarbons, A., i, 645.
- Picon, M.** See also **P. Lebeau**.
- Pictet, Amé,** and **Pierre Castan**, α -glucosyl chloride and a new disaccharide (α -glucosidoglucose), A., i, 396.
- Pictet, Amé,** and **Jacques Pictet**, the polymerisation of glucosans, A., i, 647.
- polymerisation of glucosans, A., i, 766.
- Pictet, Amé,** and **Joseph Reilly**, levulosan, A., i, 544.
- Pictet, Jacques.** See **Amé Pictet**.
- Picton, N.** See **John Joseph Sudborough**.
- Pieroni, Antonio**, influence of double linkings on the co-ordination number, A., i, 315.
- chloro-iodo- and iodoso-derivatives, A., i, 338.
- Pieroni, Antonio.** See also **Angelo Angeli**.
- Pierrat, M.**, the solubility of different potassium salts in mixtures of water and alcohol, A., ii, 401.
- Pierucci, Mariano**, atomic dimensions, A., ii, 533.
- Pietrulla, R.** See **Hermann Thoms**.
- Pighini, Giacomo**, chemical and biochemical investigations on the nervous system under normal and pathological conditions. VIII. Composition of the brain in dementia praecox, A., i, 288.
- Pike, William Herbert**, obituary notice of, T., 539.
- Pillat, Arnold**, identification of bromine in normal human organs, A., i, 78.
- Pina de Rubies, Santiago**, a new variety of antimoniferous bismuth sulphide, A., ii, 267.
- Pinkus, A.**, ionisation of gases during chemical reactions. III., A., ii, 369.
- Pinkus, A.**, and **Martin de Schulthess**, ionisation of gases during chemical reactions. II., A., ii, 363.
- Pinnow, Johannes**, reaction of calcium phosphate with sodium carbonate and sodium hydrogen carbonate, A., ii, 550.
- Pinoff, Erwin**, electrolytic pole-finder for laboratory use, A., ii, 12.
- Pirani, Marcello von**, [with **E. Lax**], point discharge in nitrogen, A., ii, 197.
- Pittarelli, Emilio**, substances which form acetone in urine and the so-called physiological acetonuria, A., i, 206.
- identification of acetaldehyde and formaldehyde in organic liquids and mixtures by means of new, extremely sensitive, colour reactions, A., ii, 222.
- Pittarelli, Emilio**, detection of acetone by degradation to derivatives of formic acid, A., ii, 367.
- new method for detecting lactic acid in gastric juice or other organic fluids, A., ii, 418.
- Piutti, Arnaldo**, action of light on alcoholic and acetonic solutions of chloropierin, A., i, 283.
- Plant, Sydney Glenn Preston,** and **Nevil Vincent Sidgwick**, the absorption of ethylene and propylene by sulphuric acid, A., i, 153.
- Plant, Sydney Glenn Preston.** See also **William Henry Perkin, jun.**
- Plantefol, L.** See **André Mayer**.
- Plauson, Hermann**, the colloid mill and its applications, A., ii, 627.
- Plausons Forschungsinstitut, G. m. b. H.**, preparation of alkyl vinyl ethers and their homologues, A., i, 702.
- Plenz, K.** See **F. Lenze**.
- Plotko, Olga von**, the influence of colloidal metal solutions on lower organisms and the reason of this influence, A., i, 82.
- the influence of colloidal metallic solutions on mycelia transferred from a different nutrient medium, A., i, 82.
- Plotnikow, Joh.**, photochemical studies. XI. Photochemical equilibria, A., ii, 76.
- influence of temperature on photochemical processes. XII., A., ii, 146.
- Podgórska, J.** See **Karol Dzwonowski**.
- Poetsch, Walter.** See **Otto Diels**.
- Pohl, Robert.** See **B. Gudden**.
- Pohle, Hans**, caoutchouc; two dimethylicacoutchoucs, A., i, 428.
- Pohle, Hans.** See also **Fritz Weigert**.
- Polányi, Michael**, non-mechanical nature of chemical processes, A., ii, 179.
- origin of chemical energy, A., ii, 179.
- the current produced when a soldered junction is submitted to pressure, A., ii, 372.
- Polányi, Michael.** See also **T. Becker**.
- Polinski, M.**, detection of formic acid in acetic acid, A., ii, 136.
- Pollak, Friedrich.** See **Affons Klemenc**.
- Pollitt, Alan A.** See **Lionel Guy Radcliffe**.
- Pollock, H. O.** See **William S. McElroy**.
- Polonovski, M.**, detection of oxalic and citric acids, A., ii, 601.
- Polonovski, M.**, and **C. Vallée**, micro-estimation of nitrogen and its biological applications, A., ii, 533.

- Poma, Gualtiero**, chemical action of the electric discharge. I, A., ii, 570.
- Poma, Gualtiero**, and **G. Bassi**, chemical action of the electric discharge. II, A., ii, 571.
- Poma, Gualtiero**, and **A. Nesti**, chemical action of the electric discharge. III, A., ii, 571.
- Pomeranz, H.**, the complete and partial reduction of nitro-compounds with iron, A., i, 725.
- Pommer, M.** See **Walther Borsche**.
- Pommereau, Herculé de**, the reduction of ethyl naphthoate and a case of reduction of an alcohol to a hydrocarbon by sodium and absolute alcohol, A., i, 567.
- Ponder, Eric**, a method for investigating the hæmolytic activity of chemical substances, A., i, 905.
- Ponder, Eric**, and **Laurence Howie**, the estimation of blood sugar, A., ii, 417.
- Pont de Nemours & Co., E. I. du**, production of alkanilines, A., i, 854.
- Poole, J. H. J.**, possibility of separating mercury into its isotopic forms by centrifuging, A., ii, 403.
- Pope, Frank George**. See **Sri Krishna**.
- Pope, (Sir) William Jackson**, isocyanines and carbocyanines; their constitution and their activity as photographic sensitizers, A., i, 690.
- Pope, (Sir) William Jackson**, and **James Leonard Brierley Smith**, the interaction of sulphur monochloride and substituted ethylenes, T, 396.
- Pope, (Sir) William Jackson**. See also **Frederick George Mann**.
- Poppe, Walter**, the dissolution of sodium chloride and sodium chlorate crystals, A., ii, 90.
- Porcher, Ch.**, and **A. Chevallier**, the distribution of saline substances and mineral elements in milk, A., i, 633.
- Porlezza, C.**, hydro-diffusion of magnesium ammonium sulphate and separation of its component salts, A., ii, 170.
- Porter, Alfred William**, the vapour pressures of mixtures, A., ii, 377.
- Porter, Charles Walter**, and **Carolus Steel**, oxidation of the Grignard reagent, A., i, 140.
- Porter, Charles Walter**, and **F. H. Thurber**, univalent oxygen; preparation and oxidation of mesitol, A., i, 505.
- Porter, Lyman E.**, and **Philip Embury Browning**, use of gallium ferrocyanide in analysis, A., ii, 277.
- Porter, Lyman E.** See also **Philip Embury Browning**.
- Porter, (Miss) Mary Wincentis**, crystallographic descriptions of some pyridine and picoline derivatives, T, 1769.
- Portes**. See **Galaviella**.
- Portevin, A.**, the electrical resistance of nickel steels, A., ii, 236.
- Portevin, A.**, and **P. Chevenard**, the retarded solution and premature precipitation of iron carbide in steels and the influence of the initial state on these phenomena, A., ii, 519.
- Posnjak, Eugen**, and **Herbert Eugene Merwin**, the Bueher cyanide process for the fixation of nitrogen, A., i, 500.
- Posternak, Siegfried**, synthesis of inositol hexaphosphate, A., i, 225.
- the constitution of the paramolybdates, A., ii, 51.
- the hexabasic polymolybdates, A., ii, 117.
- the tetrabasic polymolybdates, A., ii, 118.
- a system for the molybdates, A., ii, 311.
- Potok, J.** See **Siegfried Reich**.
- Potter, M. C.**, influence of electric potential on the velocity of fermentation, A., i, 532.
- Pouget, Jean**. See **Charles Mouren**.
- Poulton, Edward Palmer**. See **J. M. H. Campbell**, and **J. Joffe**.
- Powell, Alana Richard**. See **Walter Raymond Schoeller**.
- Powell, Walter James**. See **Christopher Kell Ingold**.
- Power, Frederick Redding**, the detection of methyl anthranilate in fruit juices, A., ii, 357.
- Prandtl, Wilhelm**, the absorption spectra of europium and samarium, A., ii, 475.
- Pratolongo, Ugo**, possible improvements in the ebulliometric estimation of alcohol in wines, A., ii, 598.
- Pratt, David Doug**. See **Alexander Kellen Macbeth**.
- Freszfrend, Ernst**. See **Robert Kraemann**.
- Price, Thomas Slater**. See **Stanley Joseph Green**.
- Pringsheim, Hans**, and **Alexander Aronowsky**, inulin, A., i, 545.
- Pringsheim, Peter**, polarisation and intensity of the fluorescence of iodine vapour and its dependence on temperature, A., ii, 287.
- influence of elevated temperature on the fluorescence and absorption spectra of iodine vapour of constant density, A., ii, 612.

- Prior, George Thurland**, the meteorites of Mount Ayliff, Simondium, Adare, and Ensisheim, A., ii, 407.
- Prior, George Thurland**. See also (Sir) *Lazarus Fletcher*.
- Proud, (Miss) Annie Kathleen**. See *Tom Sidney Moore*.
- Prud'homme, Maurice**, some relationships between the absolute values of the critical temperature and boiling point, A., ii, 83.
relationship between the absolute values of the critical temperature, the boiling point, and the melting point, A., ii, 84.
the three-temperature rule, A., ii, 376.
- Pscharr, Robert**, and *J. K. Pfaff*, the mentan wax of the central German coal, A., i, 4.
- Pucher, George W.**, the preparation of dichloroacetic acid from chloral, A., i, 6.
- Pulvermacher, Otto**, aqueous solutions, A., ii, 171.
- Puxeddu, Ernesto**, and *M. Gennari*, physico-chemical investigations on so-called hydroxyazo-compounds, A., i, 566, 623.
- Fuyal, José**, and (*Mlle.*) *Montagne*, hypnotics, A., i, 108.
- Fuyal, José**. See also *Ernest Fourneau*.
- Pyman, Frank Lee**. See *Robert George Fargher*, and *Reginald Lindsay Grant*.

Q.

- Quagliariello, G.**, protein nitrogen and residual nitrogen in the blood serum of various animals (vertebrates and invertebrates), A., i, 73.
haemocyanin. I. Refractive index.
II. Colloidal properties and isoelectric point, A., i, 467.
chemical and physical properties of muscle and muscle extracts. VII. Fats, cholesterol, and lipoids in the extract from striped muscle of dogs, A., i, 831.
- Quartaroli, Alfredo**, Bragg's work, and the law of definite proportions, A., ii, 651.
- Quick, A. J.** See *George L. Clark*.
- Quisumbing, Francisco A.**, estimation of dextrose and starch by the alkaline permanganate method, A., ii, 67.

R.

- Rabaut, Charles**, and *A. Stillmunkés*, rapid estimation of sulphur in urine, A., ii, 556.
- Rabe, Arthur**. See *Emil Fischer*.

- Rabe, Franz**, detection of methyl alcohol in spirits, A., ii, 220, 231.
- Rabe, Paul**, and *Ernst Jantzen*, the cinchona alkaloids. XXII. Synthesis of 3-acetyl-4-methylpyridine and of *g.* collidine, A., i, 438.
- Racke, Fritz**. See *Richard Willstätter*.
- Radcliffe, Lionel Guy**, and *Alan A. Pollitt*, preparation and properties of 1:3:5-trinitrobenzene, A., i, 233.
- Radcliffe, Lionel Guy**, and *Neville Simpkin*, *n*-amylbenzene and some of its derivatives, A., i, 502.
- Radsma, W.**, colloidal chemical action of salts of the alkali metals on the process of phagocytosis, A., i, 204.
- Radt, Fritz**. See *Max Bergmann*.
- Rahn, Franz**. See *Heinrich Wieland*.
- Raistrick, Harold**, and *Anne Barbara Clark*, the cycloclastic power of lactaria. II. A quantitative study of the aerobic decomposition of tryptophan and tyrosine by bacteria, A., i, 479.
- Raiziss, George W.**, and *M. Falkor*, chemistry of neoparsphenamine (neosalvarsan) and its relation to toxicity, A., ii, 420.
- Raiziss, George W.**, and *Joseph L. Gavron*, arsenical compounds related to salvarsan, A., i, 370.
- Ramann, Emil**, and *H. Junk*, basic exchange in silicates. III. A., ii, 202.
- Ramart-Lucas, (Mme.) Pauline**. See *Albin Haller*.
- Ramm, Marie**. See *Friedrich Kehrman*.
- Ramsauer, Carl**, active cross-section of gas molecules for slow electrons, A., ii, 324.
- Randall, Merle**. See *Gilbert Norton Lewis*.
- Ranedo, José**. See *José Marin Cano*.
- Ranke, Alexandra von**, reaction in the dark between chlorine and trichlorobromomethane, A., ii, 580.
- Rankine, Alexander Oliver**, proximity of atoms in gaseous molecules, A., ii, 192.
the similarity between carbon dioxide and nitrous oxide, A., ii, 192.
viscosity and molecular dimensions of gaseous cyanogen, A., ii, 459.
encounters between non-spherical gaseous molecules, A., ii, 581.
molecular structure and energy, A., ii, 690.
- Rankine, Alexander Oliver**, and *C. J. Smith*, viscosity and molecular dimensions of gaseous ammonia, phosphine, and arsine, A., ii, 694.
viscosities and molecular dimensions of methane, hydrogen sulphide, and cyanogen, A., ii, 696.

- Raper, Henry Stanley**, a human enterolith containing choleic acid, A., i, 477.
- Rassow, Hermann**, a simple method for the determination of melting points and critical temperatures, A., ii, 164.
- Rast, Karl**, an improvement in Barger's method for the estimation of molecular weight, A., ii, 623.
- Rather, J. B., and Ebenezer Emmet Reid**, identification of acids. VI. Separation of acids by means of phenacyl esters, A., ii, 356.
- Rathsam, G.** See **Hermann Staudinger**.
- Ran, Madhyar Gopal.** See **John Lionel Simonsen**.
- Raveau, C.**, the determination of the number of independent constituents; Dubrenil's rule; the action of water on a mixture of salts, A., ii, 31.
- the saturated solutions of two or several substances; application of Le Chatelier's law, A., ii, 386.
- is there redissolution of sodium chloride in the presence of a non-congruent solution submitted to evaporation? A., ii, 682.
- Ravenna, Cirio.** See **Giuseppe Luigi Ciamician**.
- Ray, Arthur B., and Frederick Oswald Anderegg**, oxidation of carbon monoxide by passage with oxygen or air through the silent discharge and over catalysts which decompose ozone, A., ii, 450.
- Ray, Francis Earl.** See **Frederick Daxlet Chattaway**.
- Ray, Jinnendra Nath**, syntheses in the thianthren series, T., 1959.
- Ray, (Sir) Praphulla Chandra, and Kallikumar Kumar**, the molecular conductivity of some sulphonium compounds in acetone, T., 1643.
- Ray, Prigadararajan, and Pulla Vihari Sarkar**, compounds of hexamethylene-tetramine with complex metallic salts and acids, T., 390.
- Rayleigh (Robert John Strutt) (Lord)**, the light diffused by argon, A., ii, 6.
- glow of phosphorus; periodic luminosity, and action of inhibiting substances, A., ii, 546.
- Raymond, Albert**, the different methods of attack of ochreous minerals, A., ii, 713.
- Read, John, and (Miss) Alberta Catherine Pritchard Andrews**, studies of halogenohydrins and related derivatives in the cinnaemic acid series. I., T., 1774.
- Read, John, and Henry George Smith**, piperitone. I. The occurrence, isolation, and characterisation of piperitone, T., 779.
- Read, J. W.**, rapid dry combustion method for the simultaneous determination of soil organic matter and organic carbon, A., ii, 348.
- Rebenstorff, H.**, the ignition of phosphorus under a bell jar standing over water, A., ii, 105.
- Reber, Theodor.** See **Hermann Staudinger**.
- Rebmann, Adolf.** See **Emil Baur**.
- Rebuffat, Orazio**, transformation of quartz into tridymite, A., ii, 44.
- Reclaire, A.**, estimation of acetanilide, A., ii, 604.
- Réglaide, J.** See **René Clogne**.
- Reich, Siegmund, J. Araus, J. Potok, and H. Tempel**, the chloro- α -bromocinnamic acids and their affinity for bromine, A., i, 27.
- Reich, Siegmund, R. van Wijck, and C. Waelle**, additive power of certain styrene derivatives, A., i, 332.
- Reichert, Federigo, and Rogelio A. Treilles**, arsenic as a normal constituent of soils, A., ii, 519.
- Reichert, J.** See **Aladar Skita**.
- Reichinstein, David**, theory of chemical affinity from the point of view of polar dissociation and the law of mass action, A., ii, 388.
- Reid, Ebenezer Emmett.** See **Oregon B. Helfrich, J. Willard Kimball, Richard L. Kramer, J. B. Rather, Yoshisuke Uyeda, and Thomas Cobb Whitner, jun.**
- Reihlen, Hans**, the space significance of the co-ordination number in polynuclear compounds, A., ii, 193.
- Reilly, (Miss) Amy Ada Beatrice.** See **John Norman Collie**.
- Reilly, Joseph**, the distillation of methyl-celluloses under reduced pressure, A., ii, 545.
- the thermal decomposition of sucrose under reduced pressure, A., i, 816.
- Reilly, Joseph, and Wilfred John Hickinbottom**, concentration and purification of aleuolic fermentation liquids. I. Distillation in steam of certain alcohols, A., ii, 599.
- Reilly, Joseph.** See also **Annie Pictet**.
- Reiman, Clarence K., and Annie S. Minot**, absorption and elimination of manganese ingested as oxides and silicates, A., i, 146.
- Reimann, Hobart A.** See **Stanley P. Reimann**.
- Reimann, Stanley P., and Hobart A. Reimann**, blood bicarbonate levels following administration of sodium hydrogen carbonate, A., i, 524.

- Reimann, Stanley P.**, and **M. D. Sauter**, comparison of blood and lymph bicarbonate after intravenous injection of sodium hydrogen carbonate, A., i, 525.
- Reimer, Marie**, and **Helen Rupert Downes**, the preparation of esters by direct replacement of alkyloxy-groups, A., i, 415.
- Reindel, Fritz**. See **Heinrich Wieland**.
- Reiner, L.**, theory of the tanning (hardening) process in dilute gelatin gels with formaldehyde, A., i, 67.
- Reiner, L.** See also **Heinrich Bechhold**.
- Reinitzer, Friedrich**, Siam benzoin. II. Siarsonic acid, A., i, 351.
- Siam benzoin. III. Properties and constitution of lubanol benzoate, A., i, 352.
- Reinkober, Otto**, characteristic ultra-red frequencies of ammonium salts, A., ii, 144.
- ultra-red absorption spectra of solid substances in thin layers, A., ii, 613.
- Reis, A.**, calculation of the heat of sublimation of the alkali haloids from the lattice structure, A., ii, 165.
- the crystal lattice, A., ii, 173.
- Reisenegger, C.** See **Heinrich Wieland**.
- Reiss, F.**, action of surface adhesion in ring reactions, A., ii, 124.
- iron as the cause of a formaldehyde and diphenylamine reaction of milk, A., ii, 346.
- Reissaus, G. S.** See **Krich Krause**.
- Reitstötter, Josef**, gold numbers of electrolyte-free fractions of albumin from normal and immune serums and their sensitising action on colloidal suspensions, A., ii, 176.
- velocity of coagulation of hydrosols of congo-rubin in the presence of carbamide and sucrose, A., ii, 495.
- Remy, Heinrich**, chemistry of the platinum metals. I. Existence of bi-valent ruthenium compounds, A., ii, 209.
- action of hydrochloric acid on the tetroxides of osmium and ruthenium, A., ii, 267.
- derivation of acid formulae from a law of homopolar atom combination, A., ii, 501.
- Renauz, E.**, errors in the detection of albumin in urine, A., ii, 472.
- Bengade, Étienne**, double saline decompositions and the law of phases, A., ii, 93.
- Renouf (Miss) Nora**. See **Arthur William Crossley**.
- Renshaw, Roemer Rex**, and **Fredrick K. Bell**, trimethylphosphine and its selenide, A., i, 404.
- Renz, Carl**, the photo-chemistry of lead compounds, A., ii, 477.
- Report of the Council**, T., 513.
- Report of the International Committee on Physico-chemical Symbols**, T., 502.
- Reppe, Walter**. See **Kurt Heinrich Meyer**.
- Retinger, J.** See **Arthur Hantzsch**.
- Rettig, F.**, electrical conductivity of gelatin mixtures and their behaviour during the transition of the gelatin, A., ii, 10.
- Reubke, Emil**. See **Wilhelm Traube**.
- Reverdin, Frédéric**, nitration of methylene-diphenetiding, A., i, 564.
- Reychler, Albert**, starch, A., i, 493, 768.
- Reynolds, William Colebrook**, on interfacial tension. I. The statical measurement of interfacial tension in absolute units, T., 460.
- on interfacial tension. II. The relation between interfacial and surface tension in sundry organic solvents in contact with aqueous solutions, T., 466.
- Rheinboldt, Heinrich**. See **Kurt Hess**.
- Rheiner, Alfred**. See **W. D. Treadwell**.
- Rheinheimer, Wilhelm**. See **Heinrich Wieland**.
- Rhode, Heinrich**, the antipyretic action of some derivatives of dimethylphenetidine, A., i, 909.
- Rhodes, F. H.**, and **F. E. Hance**, freezing-point curve of *o*-cresol-naphthalene, A., i, 857.
- Rhodes, Henry Taylor Fockes**, theory of auxiliary valencies and water of crystallisation, A., ii, 255.
- the hydroxyl ring, A., ii, 681.
- Rhyn, A. J. van**. See **Erich Ebler**.
- Rice, Frank E.**, conductivity cell, A., ii, 78.
- Rice, F. O.**, decomposition of nitric acid in organic nitrations, A., i, 102.
- Richards, Theodore William**, and **Sylvester Boyer**, gallium; its electrolytic behaviour, purification, melting point, density, coefficient of expansion, compressibility, surface tension, and latent heat of fusion, A., ii, 264.
- Richards, Theodore William**, and **Ernest K. Carver**, critical study of the capillary rise method for determining surface tension, with data for water, benzene, toluene, chloroform, carbon tetrachloride, ether, and dimethyl-aniline. II., A., ii, 334.

- Richards, Theodore William, and Henry Krepelka**, a revision of the atomic weight of aluminium; the analysis of aluminium bromide, A., ii, 48.
- Richards, Theodore William, and Allan Winter Rowe**, heats of dilution and the specific heats of dilute solutions of nitric acid and of hydroxides, chlorides, and nitrates of lithium, sodium, potassium, and cesium, A., ii, 380.
- Richardson, Owen Williams**, emission of electrons under the influence of chemical action, A., ii, 442.
- Richard, A.**, identification of ouabain and strophanthin, and a new test to distinguish between the two glucosides, A., ii, 601.
- Richard, A.** See also **René Clogne**.
- Richter-Quittner, M.**, the calcium of the blood, A., i, 235.
- Richter-Quittner, M.**, partition of cholesterol and its esters between blood corpuscles and plasma under physiological and pathological conditions, A., i, 285.
- Richter-Quittner, M.** See also **H. Falta**.
- Ricker, Norman H.**, the luminosity of mercury vapour distilled from the arc in a vacuum, A., ii, 609.
- Rideal, Eric Keightley**, the catalytic dehydrogenation of alcohols, A., i, 389.
- Rideal, Eric Keightley**, latent heats of vaporisation, A., ii, 431.
- Rideal, Eric Keightley**, critical energy increment and Trouton's rule, A., ii, 484.
- Rie, Ernst**, influence of surface tension on fusion and solidification, A., ii, 164.
- Rie, Ernst**. See also **Ernst Hauser**.
- Rie, Gertrud**. See **Ernst Philippi**.
- Riedel, J. D., Akt.-Ges.**, preparation of derivatives of hexamethylenetetramine, A., i, 14.
- Riedel, J. D., Akt.-Ges.**, preparation of derivatives of cholic acid, A., i, 540.
- Riedel, J. D., Akt.-Ges.**, preparation of additive products of hexamethylenetetramine, A., i, 774.
- Riedel, J. D., Akt.-Ges.**, improvements relating to soluble (organic) mercury compounds, A., i, 825.
- Riedel, J. D., Akt.-Ges., and Fr. Boedeker**, preparation of derivatives of hexamethylenetetramine, A., i, 774.
- Riesenfeld, Ernst Hermann** [with **Alfred Faber, Hans Feld, (Frl.) Italiener, and (Frl.) Margarete Hesse**], preparation of sulphur and sulphuric acid from sulphates of the alkaline earths, A., ii, 40.
- Riesenfeld, Ernst Hermann, and Hans Feld**, the solubility of calcium sulphide in presence of hydrogen sulphide, A., ii, 507.
- Riesenfeld, Genia**, technique of the estimation of lactic acid and the determination of the maximum capacity of lactic acid formation of the muscle, A., ii, 68.
- Rieber, Claus Nissen**. See **E. Berner**.
- Rilliet, Auguste, and Louis Kreitmann**, 6-aminopiperonaldehyde and its derivatives, A., i, 567.
- Ringer, Otto**. See **Anton Skrabal**.
- Rinkes, Jans Jan**, the action of sodium hypochlorite on amides. II, A., i, 27.
- Rinne, Fritz**, the chemical reactions of crystals and their relation to the molecular structure, A., ii, 626.
- Rippel, Albert**, influence of their reaction on the permanence of cocaine solutions, A., i, 123.
- Rippel, August**, hemicellulases in resting seeds and their supposed occurrence in higher animals, A., i, 912.
- Risseghem, H. van**, synthesis of some branched-chain hexanes, A., i, 439.
- Risseghem, H. van**, ethylenic isomerism of the $\alpha\beta$ -dibromopropenes, A., i, 492.
- Risseghem, H. van**, the formation of dibutylbutylal in the preparation of butyl alcohol by hydrogenation of crotonaldehyde, A., i, 496.
- Ritter, Kurt**. See **Hermann Thoms**.
- Ritter, George J.** See **Louis Kahlenberg**.
- Rius y Miró, Antonio**. See **Erich Müller**.
- Rivat, G.** See **Victor Grignard**.
- Rivett, Albert Cheshbury David**, graphical representation of certain heterogeneous equilibria, A., ii, 685.
- Rivett, Albert Cheshbury David**. See also **Frederick William Jeffrey Clendinning**.
- Rivilland, C.** See **Philippe Malvezin**.
- Riwin, (Miss) Rosa**, liquid crystals. V. Photographic absorption and extinction measurements, A., ii, 215.
- Rixon, Frederic William**. See **Oliver Charles Minto Davis**.
- Roaf, Herbert Eldon**, an improved form of Barfoed's reagent, A., ii, 525.
- Roberts, Howard S., and F. Hastings Smyth**, the system, copper-cupric oxide-oxygen, A., ii, 441.
- Roberts, Howard S.** See also **F. Hastings Smyth**.
- Roberts, Oswald Triggs**, the volatile oil from the leaves of the "wild pimento" of Jamaica, A., i, 515.
- Roberts, Oswald Triggs**, volatile oil from leaves of *Ocimum gratissimum*, Linn., A., i, 679.
- Robertson, George Ross**, the estimation of arsenic in organic compounds, A., ii, 275.

- Robertson, *George Ross*, and *Julius Stieglitz*, phenylacetic-*p*-arsonic acid, A., i, 284.
- Robertson, *John K.*, the electrodeless discharge in sodium vapour, A., ii, 663.
- Robertson, (*Sir*) *Robert*, some properties of explosives, T., 1.
- Robin, *Paul*, oxidation of anisaldoxime; anisaldoxime peroxide, A., i, 113. the reagent "iodine+alkali"; action on some organic nitrogenous compounds, A., i, 674.
- Robin, *Paul*. See also *J. Bongault*, and *Charles Moureu*.
- Robinson, *Charles S.* See *E. J. Miller*.
- Robinson, *Eric*. See *William Henry Perkin, jun.*
- Robinson, (*Mrs.*) *Gertrude Maud*. See *Charles Maxwell McLeod*.
- Robinson, *Robert*, the constitution of indigotin, A., i, 152. the conjugation of partial valencies, A., ii, 545.
- Robinson, *Robert*. See also *William Ogilvy Kermack*.
- Robinson, *R. H.*, acid soil studies. I. A study of the basic exchange between soil separates [mechanical fractions] and salt solutions, A., i, 644.
- Robinson, *R. H.*, and *D. E. Bullis*, acid soil studies. II. Changes in calcium compounds added to acid soils, A., i, 644.
- Robl, *Rudolf*. See *Heinrich Biltz*.
- Roccalano, *Antonio de Gregorio*, the catalytic decomposition of hydrogen peroxide by electrosols and electrogels of platinum, A., ii, 251. effect of temperature on the catalytic power of platinum and palladium sols, A., ii, 321. variations in the catalytic power of colloidal systems, A., ii, 390. variations in the catalytic power of electrosols of platinum, A., ii, 498, 542.
- Rockwood, *Elbert W.*, and *Krikor G. Khorozián*, utilisation of xylose by animals, A., i, 526.
- Rodillon, *Georges*, characteristic reaction of phenol, A., ii, 282.
- Roedel, *K.* See *Ferdinand Henrich*.
- Roederer, *Wilhelm*. See *Wilhelm Steinkopf*.
- Rogers, *G. Sherburne*, helium-bearing natural gas, A., ii, 697.
- Rogers, *Harriet*. See *Arthur J. Hopkins*.
- Rogers, *Homer*, *Walter C. Holmes*, and *Walter L. Lindsey*, melting point of diphenylamine, A., i, 338.
- Roßbacher, *August*. See *Fritz Straus*.
- Rolf, *Ida P.* See *Phoebus A. Levene*.
- Rolfes, *Hans*, dimethyldiacetonalkamine [methyl- β -dimethylaminoisobutylcarbinol] and dimethyldiacetonamine, A., i, 98.
- Rolfes, *Hans*. See also *Ludwig Gattermann*.
- Rolla, *Luigi*, and *Mario Nuti*, estimation of vanadium in steels and iron alloys, A., ii, 597.
- Rollet, *Alexander*. See *Alois Zinke*.
- Rollin, *Georges*. See *Louis Gaucher*.
- Romani, *E.*, thiouram disulphides as vulcanising agents for caoutchouc, A., i, 575.
- Romani, *E.* See also *Giuseppe Bruni*.
- Rona, *Elisabeth*, the action of enzymes under abnormal conditions and the alleged aldehydic character of enzymes, A., i, 68.
- Rona, *Peter*, and *E. Bach*, action of poisons; the action of atoxyl on serum lipase, A., i, 69.
- Rona, *Peter*, and *Paul György*, urease and the influence of poisons on its action, A., i, 69.
- Rona, *Peter*, and *H. Petow*, action of poisons; experiments on the toxic effect of $\beta\beta'$ -dihydroxyethyl sulphide and its derivatives on soja bean urease, A., i, 69.
- Rooney, *J. T.*, synthetic acetic acid and synthetic acetone; preparation of acetic acid, acetates, and acetone from calcium carbide; production of acetylene and its catalytic hydrogenation; oxidation of acetaldehyde to acetic acid; acetone, A., i, 157.
- Roos, *E.* See *Oscar Hinsberg*.
- Rosa, *E. B.*, *E. C. Crittenden*, and *A. H. Taylor*, atmospheric corrections for the Harecourt standard pentane lamp, A., ii, 704.
- Rose, *A. R.*, the inversion and estimation of sucrose, A., ii, 465.
- Rosenberg, *Irène*. See *Hartwig Franke*.
- Rosenblatt, (*Mme.*) *M.* See *Gabriel Bertrand*.
- Rosenbohm, *Ernst*. See *Israel Lifschitz*.
- Rosenfeld, *S.* See *P. Karrer*.
- Rosenmund, *Karl W.*, halogen united to ring carbon and its replacement by other substituents. III. Preparation of arsenic and sulphonic acids, A., i, 370. preparation of derivatives of hydrazine, A., i, 387.
- Rosenmund, *Karl W.*, and *Helmut Harms*, the replacement of halogen attached to a ring carbon atom by other substituents. II. Replacement of halogen by OH, SH, and SeH, A., i, 163.

- Rosenmund, *Karl W.*, and *Erich Struck*, preparation of carboxylic acids of carbo-cyclic and hetero-cyclic compounds, A., i, 176.
- Rosenmund, *Karl W.*, and *Fritz Zetzsche*, the influencing of catalysts, and specifically active catalysts, A., ii, 320.
- the influencing of the activity of catalysts. III. and IV. Oxidative catalytic dehydrogenation of alcohols. I. and II., A., ii, 393, 631.
- Rosenmund, *Karl W.*, *Fritz Zetzsche*, and *F. Heise*, the influencing of the activity of catalysts. II. Reduction of acid chlorides to alcohol and ester, A., ii, 392.
- the influencing of the activity of catalysts. V. Catalytic reduction of esters and aldehydes, A., ii, 631.
- Rosenthal, *Berta*. See *A. Schönberg*.
- Rosenthal, *D.* See *A. Schönberg*.
- Rosenthaler, *Leopold*, the hydrocyanic acid question. V. Treub's hypothesis, A., i, 484.
- the hydrocyanic acid question. VI. Hydrocyanic acid content of the leaves of cherry laurel, A., i, 484.
- Ross, *William H.*, *James B. Colbertson*, and *J. P. Parsons*, preparation of ethylene by hydrogenation of acetylene, A., i, 761.
- Roseland, *S.* See *Oskar Klein*.
- Rossem, *A. van*, and *P. Dekker*, the chemical examination of antimony sulphides, A., ii, 416.
- Rosset, *H.*, application of the determination of miscibility temperature to alcoholimetry, A., ii, 598.
- Rossiter, *Edmund Charles*, and *P. H. Sanders*, preparation of zirconia from Brazilian ore and a new method of estimation, A., ii, 341.
- Rossner, *Ernst*. See *Günter Scheibe*.
- Rosentscher, *F.* See *Ferdinand Henrich*.
- Roth, *A.* See *Walther Borsche*.
- Roth, *Adolf*. See *Ernst Weitz*.
- Roth, *Walter Adolf*, *R. Macheleidt*, and *Ing. Wilms*, new type of combustion bomb made of Krupp's special steel, A., ii, 709.
- Rothsinn, *E.* See *Leopold Ruzicka*.
- Rouchelman, (*Mlle.*) *N.* See *Robert Fosse*.
- Rouge, *E.*, first products of the chlorophyll assimilation of carbon, A., i, 811.
- Roure-Bertrand Fils, physical constants and characteristic derivatives of the principal constituents of the essential oils, A., i, 797.
- Roure-Bertrand Fils, certain essential oils, A., i, 797.
- labdanum and the analytical characters of the oils of *Cistus ladaniferus*, L., and *Cistus monspeliensis*, L., A., i, 798.
- Roux, (*Mlle.*) *A.*, and *Jh. Martinet*, the catalytic action of mercury in the sulphonation of anthraquinone, A., i, 257.
- Roux, *E.* See *Eugène Tassilly*.
- Row, *P. O.* See *Horace A. Shonle*.
- Rowe, *Allan Winter*. See *Theodore William Richards*.
- Rowe, *Frederick Maurice*, some properties of nitroamines and their derivatives, A., i, 412.
- Rowe, *Frederick Maurice*, and (*Miss*) *Ester Levin*, studies in the dihydro-naphthalene series. II. The ar-dihydro- α -naphthols and their derivatives, T., 2021.
- Rubens, *Heinrich*. See *Theodor Liebisch*.
- Ruble, *Howard Ernest*. See *Necil Vincent Sidgwick*.
- Ruby, *Charles E.*, equilibrium conditions of the reaction between manganate, permanganate, and manganese dioxide, A., ii, 246.
- Ruderer, *Helmut*. See *Robert Kre-mann*.
- Rudolph, *O.*, a Bunsen burner constructed from glass tubing, A., ii, 325.
- apparatus for drying substances which are unstable at high temperatures, A., ii, 325.
- colour reactions of some nitro-substances, A., ii, 604.
- Rüdinger, *A.* See *P. Karrer*.
- Rüggh, *Paul*, and *Adolf Bolliger*, constitution of the isoisotogens, A., i, 811.
- action of phenylhydrazine on isoto-gens, A., i, 812.
- Ruer, *Rudolf*, iron-carbon alloys, A., ii, 553.
- Ruer, *Rudolf*, and *Julius Biren*, solubility of graphite in molten iron, A., ii, 198.
- Ruff, *Otto*, and *Erich Kröhnert* [with *Hans Julius Braun*], the relative firmness of the combination of sulphurous acid with ammonia and mercury, A., ii, 202.
- Ruff, *Otto*, and *Susanne Mugdan*, high temperature investigations. XIII. The measurement of vapour pressures at high temperatures and the vapour pressures of the alkali haloids, A., ii, 485.

- Ruff, Otto**, and **Paul Schmidt**, high temperature investigations. XIV. The vapour pressures of the oxides of silicon, aluminium, calcium, and magnesium, A., ii, 486.
- Ruff, Otto**, and **Karl Staib**, reduction of inorganic haloids. I. Reduction with aluminium and [the preparation of] aluminium-triarsenic trichloride, A., ii, 508.
- Ruffe, John**, obituary notice of, T., 541.
- Ruhemann, Stegfrid**, chromones and flavones, A., i, 430.
- Ruland, K.** See **Alfred Benrath**.
- Rule, Frances D.** See **John P. Peters, jun.**
- Runge, Iris**, the velocity of diffusion of carbon in iron, A., ii, 455.
- Rupe, Hans**, preparation of limonene and pinene nitroschlorides, A., i, 258.
- Rupe, Hans**, and **W. Diehl**, condensation products of phenylhydroxylamine with hydroxymethylene-compounds and carbinols. I. Hydroxymethylene-camphor and phenylhydroxylamine, A., i, 425.
- Rupe, Hans**, **Alfred Krethlow**, and **Karl Langbein**, the influence of constitution on the dispersive power of optically active substances. XIII. [The absorption spectra of optically active substances], A., ii, 473.
- Ruppert, F. von.** See **A. Kircher**.
- Russell, J.** See **Otto Maass**.
- Rusznayák, Stefan**, physico-chemical investigations on body fluids; the character of the chlorine in serum and plasma, A., i, 73.
- physico-chemical investigations on body fluids. II. The condition of the sugar in serum, A., i, 286.
- a method for the estimation of chlorides in small quantities of liquids, A., ii, 272.
- Rusznayák, Stefan**, and **Ágcsa Hetényi**, physico-chemical investigations on body fluids. III. The condition of the residual nitrogen, A., i, 286.
- Rutherford, (Sir) Ernest**, mass of the long-range particles from thorium-C, A., ii, 293.
- the stability of atoms, A., ii, 582.
- Rutherford, (Sir) Ernest**, and **Jones Chadwick**, disintegration of atoms by α -particles, A., ii, 293.
- artificial disintegration of light elements, A., ii, 671.
- Ruzicka, Leopold**, polymerisation of Δ^2 -cyclohexenones, A., i, 31.
- synthetic investigations in the quinine series. II. Quinine-like compounds, A., i, 581.
- Ruzicka, Leopold** [with **E. Rotheim**, and **W. Kuhn**], camphor, A., i, 32.
- Ruzicka, Leopold** [with **C. T. Seidel**], synthetic investigations in the quinine series. III. Aliphatic quinatoxins, A., i, 585.
- Ruzicka, Leopold** [with **C. T. Seidel**, and **E. Hugoson**], derivatives of δ - and ϵ -amino-acids, A., i, 591.
- Ruzicka, Leopold**, and **Virginia Fornasir**, syntheses of 4-piperidone, A., i, 52.
- Ruzicka, Leopold**, and **Jules Meyer**, sesquiterpenes. I. Conversion of cadinene into a naphthalene hydrocarbon, A., i, 573.
- Ruzicka, Leopold**, and **H. Trebler**, pinene. I. Partial synthesis of pinene from a pinene derivative, A., i, 36.
- pinene. II. Attempts to prepare homopinocamphoric acid from pinonic acid; conversion of pinonic acid into tetrahydrocarvone, A., i, 37.
- pinene. III. Constitution of nitropinene and its transformation products, A., i, 573.
- pinene. IV. Synthesis of pinocampnone and α -pinene from monocyclic compounds, A., i, 736.
- Ryschkewitsch, Eugen**, the fusion of carbon, A., ii, 258, 586, 696.

S.

- Saar, R.** See **L. Hartwig**.
- Sabalitschka, Th.**, the sodium acetate method for the separation of the bivalent metals from the trivalent metals in the ammonium sulphide group, A., ii, 278.
- decomposition of sodium, potassium, ammonium, and aniline hydroxy sulphates and potassium binoxalate and tetraoxalate by solvents, A., ii, 401.
- Sabalitschka, Th.**, and **M. Daniel**, formation of salts of dicarboxylic acids with aniline and its homologues, A., i, 174.
- Sabalitschka, Th.**, and **W. Erdmann**, detection of manganese in presence of phosphates, A., ii, 134.
- Sabalitschka, Th.**, and **H. Niesemann**, the interference of phosphates in the detection of manganese and its avoidance, A., ii, 278.
- Sabalitschka, Th.**, and **H. Schröder**, estimation of aniline and its titrimetric diazotisation, A., ii, 224.

- Sabalsitchka, Th., and H. Schröder**, volumetric estimation of aniline by diazotisation, A., ii, 468.
the decomposition of acid salts of dibasic acids in aqueous solution, especially the influence of bases on the amount of this decomposition, A., ii, 496.
- Sabatier, Paul, and Bonasuke Kubota**, catalytic hydrogenations by means of copper, A., i, 347.
action of heat on allyl alcohol in the presence of different catalysts, A., i, 645.
catalytic decomposition of allyl alcohol; special action of different oxides, A., i, 645.
- Saccardi, Pietro**, pyrrole and melanuria. IV., A., i, 755.
- Sachnovska, (Miss) A. A.** See *A. Zaleski*.
- Sachs, Georg**, decomposition of ethyl thioacetate by mercury salts; a contribution to the chemistry of mercury mercaptides, A., i, 762.
- Sachs, P.** See *Leo Hermanns*, and *Sigfried J. Thannhauser*.
- Saha, Mohd Nadr**, elements in the sun (Paper B), A., ii, 4.
the problems of temperature radiation of gases, A., ii, 162.
- Sailer, Geza**, the action of sodium hypsulphite on metallic salts of the platinum group, A., ii, 513.
- Saitô, Kakuji.** See *Sôjirô Kawase*.
- Skoschansky, Alexander**, an extraordinary numerical relationship between calcium and strontium, A., ii, 501.
- Salkowski, Ernst [Leopold]**, the production and properties of pathological melanin. II. The normal pigment of the liver, A., i, 384.
the behaviour of formaldehyde in the animal body, A., i, 478.
the cellulose of lichens and yeast; the concept "hemicellulose" and the autolysis of yeast, A., i, 499.
the action of alkaline hydrogen peroxide on silver [nitrate] solution and the behaviour of silver towards dilute sulphuric acid, A., ii, 586.
- Salmon, Cyril Sebastian.** See *W. F. Darke*, and *James William McBain*.
- Samec, Maximilian**, the chemistry of the polysaccharides, A., i, 235.
- Samec, Maximilian, and H. Haerdtl**, plant colloids. IX. Various starches, A., i, 226.
- Samec, Maximilian, and Johann Matula**, plant colloids. VIII. Some cellulose dextrins, A., i, 397.
- Samec, Maximilian, and (Mlle.) Anka Mayer**, the fundamental organic substance of amylopectin, A., i, 397.
plant colloids. X. Action of formaldehyde on starch, A., i, 400.
the synthesis of amylopectin by phosphoric esterification of the erythramyloses, A., i, 649.
plant colloids. XI. Electro-disintegration of starch solutions, A., i, 707.
- Sanchez, Juan A.**, colour reaction for nicotine and conine, A., ii, 719.
- Sandberg, Marta.** See *Carl Neuberg*.
- Sanders, P. H.** See *Edmund Charles Rossiter*.
- Sandow, W.** See *Friedrich Meyer*.
- Sandoz, Maurice.** See *Friedrich Kehrmann*.
- Sands, James Edwin.** See *Frederic Stanley Kipping*.
- Sanfourche, André**, the absorption of oxides of nitrogen by nitric and sulphuric acids, A., ii, 504.
- Sarkar, Pulin Vihari.** See *Priyadarajan Ray*.
- Sarma, P. V.**, cuprous oxide obtained by reduction, A., ii, 264.
- Sasa, Hidematsu**, preparation of phthalic anhydride, A., i, 511.
- Sasaki, Takaoki**, condensation of glycine anhydride with aldehydes; new synthesis of *dl*-phenylalanine and *dl*-tyrosine, A., i, 196.
dl- β -2-furyl- α -alanine, A., i, 808.
a colour reaction of glycine anhydride and the dipeptide anhydrides containing glycyl components, A., ii, 358.
- Sasaki, Takaoki, and Tokudji Hashimoto**, condensation of certain dipeptide anhydrides with benzaldehyde, A., i, 197.
- Sasse, Otto**, volumetric analysis, A., ii, 218.
- Satô, Shinichi.** See *Heisaburô Kondô*.
- Sauerland, rapid estimation of silver in alloys by a modified silver chloride method**, A., ii, 595.
- Saunders, F. A.**, revision of the series in the spectrum of calcium, A., ii, 362.
- Sauter, M. D.** See *Stanley P. Reimann*.
- Sauvageot**, the retarded solution and premature precipitation of cementite in eutectic and hypereutectic carbon steels, A., ii, 553.
- Savès.** See *Alexandre Desgrez*.
- Saville, William Bristow.** See *Martin Oswald Forster*.

- Sawyer, R. A.**, vacuum hot-spark spectrum of zinc in the extreme ultra-violet region, A., ii, 363.
- Sawyer, R. A.** See also *Robert Andrews Millikan*.
- Sázavský, V.**, estimation of sucrose by the inversion method, A., ii, 418.
- Sazerae, Robert**, and **C. Levaditi**, action of bismuth on syphilis and on Nagana trypanosomiasis; treatment of syphilis by bismuth, A., i, 908.
- Sbarsky, B.** See *Alexis Bach*.
- Sborgi, Umberto**, and **C. Franco**, physico-chemical study of the double decomposition $(\text{NH}_4)_2\text{B}_4\text{O}_7 + 2\text{NaCl} = \text{Na}_2\text{B}_4\text{O}_7 + 2\text{NH}_4\text{Cl}$, for the technical preparation of borax, A., ii, 580.
- Sborgi, Umberto**, and **Paolo Marchetti**, anodic behaviour of metals in non-aqueous solutions. II. Behaviour of various metals in acetone solutions, A., ii, 572.
- Sborgi, Umberto**, and **Giulio Nocentini**, velocity of decomposition and catalysis of sodium perborate, A., ii, 499.
- Scala, Alberto**, combination of mineral salts with organic colloids and the condition in certain growths, A., i, 287.
- Scarborough, Harold Archibald**. See *Albert Eric Cashmore*, and *William Henry Perkin, jun.*
- Scatchard, G.** See *Victor Grignard*.
- Schaaf, Fr.** See *Fr. Bürki*.
- Schaal, R. B.**, estimation of vanadium in ores and metallurgical products, A., ii, 659.
- Schaarschmidt, Alfred**, and **Max Thiele**, preparation of oxidation products of paraffin. I., A., i, 1.
- Schadler, Jos.**, enclosures in Styrian basalt-tuffs, A., ii, 122.
- Schaefer, Walter**, thermal and crystallographic investigation of the ternary systems, lithium chloride, sodium chloride, potassium chloride and calcium chloride, strontium chloride, barium chloride, A., ii, 95.
- Schleich, W.** See *Karl von Auwers*.
- Schaltenbrand, Georg**, the arrangement of the periodic system of the elements, A., ii, 445.
- Schames, Léon**, vapour pressure, A., ii, 165.
- Scharnow, B.** See *John Eggert*.
- Schattner, Anna**. See *Ludwig Moser*.
- Schatzkes, J.** See *Adolf Sieglitz*.
- Schaum, Karl**, and **Hermann Lang**, colour of the photochlorides and colloidal silver. I., A., ii, 506.
- Scheer, K.**, the chloride content of the serum of sucklings, A., i, 905.
- Scheffer, Alfred**. See *Ernst Weitz*.
- Scheffer, Frans Eppo Cornelis**, simultaneous reactions of the same probability, A., ii, 540.
- Scheffler, Kurt**, colorimetric estimation of arsenic in the urine and blood of persons treated with salvarsan, A., ii, 215.
- Scheibe, Günter** [with *Ernst Rossner*], di- and tri-quinolymethanes united by the pyridine nuclei. II. Di-2-quinolymethane and the syntheses of ψ -isocyanine and quinoline-red, A., i, 451.
- Scheibe, Günter**, and *Ernst Rossner*, di- and tri-quinolymethanes united by the pyridine nuclei. I. Tri-2-quinolymethane, A., i, 62.
- Scheibe, Günter**. See also *Otto Fischer*.
- Scheibler, Helmut**, and *Martin Schmidt*, compounds of thiophen. I. Isomeric *n*-propyl- and isopropyl-thiophens, A., i, 191.
- Schemp, Erich**. See *Hans Thierfelder*.
- Schenck, Martin**, the bile acids. VII. and VIII., A., i, 179.
- Schenk, Daniel**. See *Edgar Wedekind*.
- Schenk, P.**, the mode of action of 4-β-aminoethylglyoxaline (histamine) on the human organism, A., i, 649.
- Scherffig, H.** See *Friedrich Flade*.
- Scheringa, Klaas**, adsorption of water by powdery substances, A., ii, 491.
- Schertz, E. N.** See *Paul H. M.P. Brinton*.
- Scheuermann, A.** See *Richard Lorenz*.
- Schibbe, Gustav**. See *Carl Tubandt*.
- Schlicht, A.-G.**, *Georg*, preparation of alcohols of high molecular weight, A., i, 155.
- Schiff, Er.**, and *Emil Stranek*, magnesium metabolism; influence of subcutaneous injection of magnesium sulphate on the elimination of calcium in the urine of healthy children and in cases of calculuria, A., i, 381.
- Schindelmeyer, J.**, oxidation of diamylene, A., i, 490.
- Schietz, A. D.**, electrolysis of cerium salts in aqueous solutions, A., ii, 589.
- Schirmeisen, Karl**, anthophyllite from Moravia, A., ii, 122.
- Schirmer, Oskar**, composition of fatty tissue under various physiological and pathological conditions, A., i, 635.
- Schlatter, Hugo**, catalysis in the manufacture of ethyl ether, A., i, 89.

- Schleede, *Arthur*. See *Erich Tiede*.
- Schleicher, *A.*, relations between crystallographic phenomena and constitution of some organic compounds, A., ii, 25.
- limited "free rotation" from the point of view of the theory of symmetry, A., ii, 25.
- Schleiffer, *Marianne*. See *Josef Herzig*.
- Schlenker, *K.* See *Hermann Staudinger*.
- Schlessner, *C. A.*, and *Hugo Voswinkel*, synthesis of γ -cocciinic acid and attempt to synthesise cochenillie acid, A., i, 111.
- Schlosing, *A. Th.*, the separation of two salts having a common ion, A., ii, 51.
- Schlötter, *Max*, electrolytic oxidation and reduction in presence of metallic salts, A., ii, 820.
- Schmajewski, *Ch.* See *Friedrich Kehrman*.
- Schmellenkamp, *E.* See *Karl von Auwers*.
- Schmid, *Fritz*. See *Hans Eduard Fierz*.
- Schmidt, glass autoclave, A., ii, 255.
- Schmidt, *Carl L. A.*, the reaction of taurine with α -naphthylcarbimide, A., i, 652.
- Schmidt, *Carl L. A.*, and *A. E. Dart*, the estimation of bile acids in bile, A., ii, 284.
- Schmidt, *Erich*, and *Erich Graumann*, inactive substance of plants. I. Method of preparing plant-tissue substances in the pure condition. I., A., i, 912.
- Schmidt, *Erich*, and *Richard Schumacher*, tetranitromethane. IV. Conversion of tertiary amines into secondary nitrosoamines, A., i, 669.
- Schmidt, *Erich*, *Richard Schumacher*, and *Hans Kuhlmann*, preparation of chloro- and bromo-trinitromethane, A., i, 645.
- Schmidt, *Ernst*, ψ -thiohydantoin, A., i, 100.
- Schmidt, *Gerhart Carl*, luminescence of solid solutions, A., ii, 567.
- Schmidt, *Hans*, ethyl- and allyl-selenocarbamides and their alkyl haloids, A., i, 775.
- Schmidt, *K.*, estimation of metals in alloys of known qualitative composition, A., ii, 595.
- Schmidt, *Martin*. See *Helmuth Scheibler*.
- Schmidt, *Max*. See *Erich Benary*.
- Schmidt, *Maximilian P.*, and *Alfred Hagenböcker*, ψ -azimides. I. and II., A., i, 897.
- Schmidt, *Paul*. See *Otto Ruff*.
- Schmiedel, *T.*, and *H. Klencke*, preparation of sulphuric acid, A., ii, 196.
- Schmitt, *Paul*. See *Hans Stobbe*.
- Schmitz, *Ernst*. See *Gustav Enbden*.
- Schmitz, *Henry*, wood decay. II. Enzyme action in *Polyporus colatus*, Peck, and *Fomes ignarius* (L.) Gillet, A., i, 703.
- Schmiz, *Edvard*, harmony of atomic weights, A., ii, 101.
- Schneider, *A.* See *Charles Dhéré*.
- Schneider, *Arthur*. See *Hartwig Franzen*.
- Schneider, *M.* See *Heinrich Lüers*.
- Schneider, *Ralph F.* See *S. A. Braley*.
- Schneider, *W.* See *Atabar Skita*.
- Schneider, *Wilhelm*, and *Otto Böger*, reduction of coralyne to dihydrocoralyne and α -coralydine, A., i, 801.
- Schneider, *Wilhelm*, and *Arnold Köhler*, acetyl-N-methylisopapaverine, A., i, 803.
- Schneider, *Wilhelm*, and *Fritz Kunau*, sulphoacetic acid as condensing agent. III. Acetylnaphthyl methyl ether and 3-acetyl-2-methyl-8-naphthachromone- α , A., i, 879.
- Schneider, *Wilhelm*, and *Heinrich F. W. Meyer* [with *Kurt Vollrath*], pyranhydrones, a new group of coloured, quinhydrone-like additive compounds, A., i, 650.
- Schneider, *Wilhelm*, and *Fritz Seebach*, sulphoacetic acid as condensing agent. II. Synthesis of tri-*p*-anisylbenzene from anisole, A., i, 859.
- 2:6-diaaryl-4-methylpyrylium salts and pyranhydrones, A., i, 877.
- Schneiderhöhn, *Hans*, the transformation of aluminium silicates by salt solutions at temperatures up to 200°, A., ii, 114.
- Schneidewind, *R.*, removal of nitrates by means of alcohol, A., ii, 129.
- Schoder, *Felix*. See *K. Hugo Bauer*.
- Schoeller, *Walter*, constitution of acetomercuriformic esters, A., i, 16.
- Schoeller, *Walter Raymond*, and *Max Richard Powell*, investigations into the analytical chemistry of tantalum, columbium and their mineral associates. I. The use of tartaric acid in the analysis of natural tantalocolumbates. II. The separation of zirconium from tantalum and from columbium, T., 1927.
- Schoeller, *Walter Raymond*, and *E. F. Waterhouse*, gravimetric estimation of bismuth as phosphate and its application to the analysis of ores, A., ii, 135.
- Schön, *Richard*. See *Karl Feist*.

- Schönberg, *A.* [with *D. Rosenthal*], *o*-quinones and 1:2-diketones. II. Action of aqueous ammonia on benzils in the absence of air, *A.*, i, 272.
- Schönberg, *A.*, and *Berta Rosenthal*, *o*-quinones and 1:2-diketones. III. Constitution of phenanthraquinone-imide anhydride, *A.*, i, 808.
- Schönberg, *A.*, and *F. Nedzati*, *o*-quinones and 1:2-diketones. I. Explanation of the anhydride of acenaphthenequinoneimide as diacenaphthyleneazotide [acenaphthylene-1:2-azine], *A.*, i, 275.
- Schoep, *A.*, nature and chemical composition of a mineral containing cobalt found at Katanga, *A.*, ii, 649.
- Scholes, *S. R.*, an aid in the estimation of silica, *A.*, ii, 132.
- Scholtz, *Kurt*, ternary systems of potassium chloride, sodium chloride, and the chlorides of bivalent metals, *A.*, ii, 97.
- Scholl, *Roland* [with *Herbert Hähle*], new class of compounds with trivalent carbon, *A.*, i, 872.
- Scholl, *Roland*, *Christian Seer*, and *Alvis Zinke*, the methyl-1:2-benzanthraquinone series. III., *A.*, i, 677.
- Scholtz, *F.* See *Richard Stoermer*.
- Schulze, *Josef*. See *Adolf Grün*.
- Schomer, *Arnold*, estimation of yohimbine in yohimba bark, *A.*, ii, 360.
- Schoonover, *Warren R.* See *Albert L. Whiting*.
- Schoorl, *Nicolaas*, a sensitive modification of the iodoform reaction for alcohol, *A.*, ii, 355.
- Schoorl, *Nicolaas*, and *I. M. Kolthoff*, estimation of the alkali metals as sulphates, *A.*, ii, 61.
- Schotte, *Herbert*. See *Max Bergmann*.
- Schottky, *W.*, dynamic quantum weight, Nernst's theorem, and Gibbs's paradox, *A.*, ii, 179.
- Schoutissen, *H. A. J.* See *Jacob Böeseken*.
- Schrader, *H.* See *Fritz Fischer*, and *Th. Sabalitschki*.
- Schrader, *Hans*, oxidation of aromatic hydrocarbons under pressure, *A.*, i, 329.
- Schreiber, *G.* See *Josef Houben*.
- Schreiner, *Erling*, new conceptions of electrolytes. I. The degree of dissociation of acetic acid in water and in salt solutions, *A.*, ii, 425.
- new conceptions of electrolytes. II. The introduction of a catalysis coefficient in hydrogen-ion catalysis, *A.*, ii, 493.
- Schroeter, *Georg*, preparation of methyl bromide, *A.*, i, 217.
- o*-tetrahydro- β -naphthylbenzoic acid, its reduction and condensation products, *A.*, i, 861.
- Schrötter, *Robert von*. See *Wilhelm Wislicenus*.
- Schryver, *Samuel Barnett*. See *Albert Charles Chibnall*.
- Schubart, *Ilse*. See *Wilhelm Steinkopf*.
- Schuchard, *E.* See *Alfred Stavenhagen*.
- Schuckmann, *W. von*, serologic behaviour of different races of amoeba, *A.*, i, 204.
- Schudel, *Gustav*, the anthocyanins of *Beta vulgaris*, *L.*, and *Rapianus sativus*, *L.*, *A.*, i, 485.
- Schulek, *E.*, estimation of the saponification number, iodine-bromine number and bromine-substitution number [of fats and waxes], *A.*, ii, 603.
- Schulte, *E.* See *Alfred Thiel*.
- Schulte, *J.*, the influence of cerium on the properties of aluminium and of some of the more important light metal alloys, *A.*, ii, 454.
- Schulthess, *Martin de*. See *A. Pinks*.
- Schultz, *Albert*, spectrum-analytical investigations of the canal and cathode rays of the positive point discharge in oxygen and nitrogen, *A.*, ii, 234.
- Schultz, *E. W.*, and *J. R. Chandler*, acidity of goat's milk in terms of hydrogen-ion concentration, with comparisons with that of cow's and human milk, *A.*, i, 383.
- Schultz, *Karl*, ultra-violet absorption spectrum of benzene vapour, *A.*, ii, 74.
- Schulze, *Alfred*, vapour tension and molecular volume of toluene-benzene mixtures, *A.*, ii, 378.
- equilibria in condensed systems, *A.*, ii, 388.
- the physical properties of mercury, *A.*, ii, 403.
- Schulze, *Walter*. See *Wilhelm Traube*.
- Schumacher, *Richard*. See *Ernst Schmidt*.
- Schumb, *Walter Cecil*. See *Graund Jones*.
- Schwalbe, *Karl Gustav*, and *Ernst Becker*, differentiation between oxycellulose and hydrocellulose by titration, *A.*, i, 308.
- Schwarz, *Erk*. See *Sigmund Fränkel*.
- Schwarz, *Robert*, silicic acid gels, *A.*, ii, 260.
- Schwarz, *Robert* [with *A. Haacke*], the binary systems of lithium orthosilicate with zirconium orthosilicate and calcium orthosilicate, *A.*, ii, 452.

- Schwarz, Robert, and Hans Bausch, the introduction of silicic acid into the nucleus of complex compounds, A., ii, 404.
- Schwarz, Robert, and Erich Konrad, the existence of gaseous hydrides of zirconium and thorium, A., ii, 645.
- Schwarz, Robert, and Heinrich Stock, photochemical decomposition of silver bromide. I., A., ii, 614.
- Schwarzer, Gustav. See Hans Lieb.
- Schweizer, Karl, production of glycerol by alcoholic fermentation, A., i, 757.
- application of the precipitometer and of an apparatus for the estimation of catalase to the study of the course of alcoholic fermentation, A., ii, 227.
- chwen, Gustav. See Wilhelm Steinkopf.
- chwendenwein, Hugo, ionic size and lattice energy of the alkali haloids for atom models with cubic symmetry, A., ii, 310.
- chwyrer, Jeanne E. See Alfred Werner.
- cott, John Richard, and Julius Brend Cohen, on some carbanido-acids and their hydantoins, T., 664.
- cara, George W., the separation and detection of arsenate and arsenite, A., ii, 347.
- esse, V. B. See Benjamin Franklin Lovelace.
- eebach, Fritz. See Wilhelm Schneider.
- eger, A. See Walther Diltthey.
- eliger, Rud., conditions for the excitation of the mercury lines, A., ii, 143.
- eliger, Rud., and D. Thae, arc and spark spectra of the alkalis, alkaline earths, and earths, A., ii, 566.
- er, Christian. See Roland Scholl.
- gnitz, Paul H., catalysis of permanganate titrations, A., ii, 125.
- idel, C. T. See Leopold Ruzicka.
- idel, F. See Alfred Eckert.
- idenberg, Armin, the quantitative separation of the lead salts of the saturated from the less unsaturated fatty acids, A., i, 705.
- ka, Reinhard. See Ernst Philipp.
- kera, Franz, periodic precipitation and coagulation by electrolytes, A., ii, 31.
- mon, Waldo L. See Fred H. Heath.
- and Herman V. Tartar.
- nderens, Jean Baptiste, catalytic dehydration of amyl alcohol from fermentation, A., i, 4.
- catalytic decomposition of the chloroacetic acids, A., i, 157.
- Senderens, Jean Baptiste, and Jean Aboulenc, catalytic decomposition of the bromoacetic acids and of mixtures of bromine and acetic acid, A., i, 536.
- Sernagiotto, Emilio, preparation of cyanogen chloride, A., i, 500.
- Seroin, J. See A. Muguet.
- Sertz, H., estimation of small quantities of fluorine in natural products by means of Hempel and Scheffer's gasometric method, A., ii, 706.
- Seyewetz, Alphonse. See Auguste Lumière.
- Seyfried, Lillian M. See William Hammett Hunter.
- Shaffer, Philip Anderson, antiketogenesis. I. An in vitro analogy. II. The ketogenic-antiketogenic balance in man, A., i, 754.
- Shaffer, Philip Anderson, and A. F. Hartmann, the iodometric estimation of copper and its use in sugar analysis. I. Equilibria in the reaction between copper sulphate and potassium iodide, A., ii, 417.
- the iodometric estimation of copper and its use in sugar analysis. II. Methods for the determination of reducing sugars in blood, urine, milk, and other solutions, A., ii, 417.
- Shanks, W. F., choline as a precursor of creatine, A., i, 530.
- Shannon, Earl V., naumannite from Idaho, A., ii, 52.
- boulangerite, bismutoplagonite, and jamesonite, A., ii, 52.
- tetrahedrite, triplite, anthophyllite, etc., A., ii, 458.
- amesite, corundophilite, and chromium-bearing chlorites, A., ii, 459.
- minerals from the tungsten mine at Trumbull, Connecticut, A., ii, 458.
- ferroanthophyllite from Idaho, A., ii, 703.
- Shannon, Earl V. See also D. Foster Hewett.
- Shaver, W. W. See John Cunningham McLennan.
- Shaw, W. M. See Walter Hoge MacIntire.
- Shaxby, J. H., vapour pressures and the isothermals of vapours, A., ii, 239.
- Shedd, Oliver March, a short test for easily soluble phosphate in soils, A., ii, 274.
- Sheldon, H. Horton, charcoal activation, A., ii, 88.

- Sheppard, Samuel Edward. See *Theodor A. Elliott*, photometric method and apparatus for the study of colloids, A., ii, 310.
- Sheppard, Samuel Edward. See S. S. Sweet, the elastic properties of gelatin jellies, A., ii, 311.
- Sheppard, Samuel Edward. See also *Felice A. Elliott*.
- Sherk, D. C. L., urethanes of glycerol and carvacrol, A., i, 239, 37.
- Sherrill, Elmer, centrifugal method for estimating potassium, A., ii, 348.
- Sherwin, Carl P., and Walter A. Hynes, the metabolism of nitrobenzaldehydes and nitrophenylacetaldehyde, A., i, 754.
- Sherwood, Frank F. See *Ellis I. Palmer*.
- Shibata, Yûji, and Kenjiro Kimura, Japanese minerals containing rare elements. I. Analysis of naegite, ferugonite, and monazite, from Naegi, Mino Province, A., ii, 269.
- Shields, John, obituary notice of, T., 569.
- Shimizu, Shin. See *Moboki Matsui*.
- Shimomura, Akira, and Julius Bernd Cohen, physical and physiological properties of some hydrogenated quinoline compounds, T., 740.
- a new method for the resolution of asymmetric compounds, T., 1816.
- Shinozaki, Yonosuke, essential oil of *Juniperus tarifolia*, A., i, 351.
- essential oil of *Vitex trifolia*, A., i, 351.
- essential oil of dokulame, A., i, 574.
- essential oil of kokusagi, A., i, 574.
- composition of the essential oil of aburachan, A., i, 679.
- Shipley, P. G. See *Elmer Vernon McCollum*.
- Shive, John W. See *Linus H. Jones*.
- Shonle, Horace A., and P. Q. Row, new benzyl esters possessing an antispasmodic action, A., i, 341.
- Short, James J. See *Viebo Carolyn Myers*.
- Short, Wallace Frank, a new method for the preparation of α -acylphenylhydrazines, T., 1445.
- Shortrose, D. N. See *C. Frewen Jenkin*.
- Shutt, William James. See *Robert Owen Griffith*.
- Sidgwick, Nevil Vincent, and Wilfrid Major Aldous, influence of position on the solubility and volatility of the mono- and di-nitrophenols, T., 1001.
- Sidgwick, Nevil Vincent, and (Miss) Eleanor Katharine Ewbank, the stability of tautomeric formaldehydephenylhydrazones, T., 486.
- the influence of position on the solubilities of the substituted benzoic acids, T., 979.
- Sidgwick, Nevil Vincent, and Harold Ernest Rubie, the solubility and volatility of the chloro- and nitro-anilines and of their acetyl derivatives, T., 1013.
- Sidgwick, Nevil Vincent. See also *Sydney Glenn Preston Plant*.
- Sido, Max, cyclic imide ethers of diglycollic acid as sweetening agents, A., i, 447.
- Sieber, Wilhelm. See *Theodor Curtius*.
- Siebert, Sigurd. See *Edmund Speyer*.
- Sieburg, Ernst, the physiological action of some naturally occurring hydroxycoumarins (umbelliferone, daphnetin, aesculetin, chrysotropic acid, and berniarin), A., i, 289.
- Sieburg, Ernst, and Erich Harloff, the behaviour of substances of the dibenzil series (dibenzyl, hydroxybenzoin, deoxybenzoin, benzoin, benzil, benzilic acid) in the organism, A., i, 146.
- Sieburg, Ernst, and Karl Vietsene, the biochemical behaviour of glycollic and oxalic acids, especially against the cells of isolated human organs, A., i, 145.
- Siefert, Fritz. See *Karl Fleischer*.
- Sieg, B. See *H. von Wartenberg*.
- Siegbahn, Manne, Axel E. Lindh, and Nils Stenanson, a process of spectrum analysis by means of Rontgen rays, A., ii, 344.
- Siegens, Hans. See *Conway von Gisselwald*.
- Sieglitz, Adolf, the fluorene series. III. Derivatives of ethyl dibromofluorene-glyoxylate, A., i, 110.
- Sieglitz, Adolf, and H. Jassoy, the fluorene series. VI., A., i, 791.
- Sieglitz, Adolf, and J. Schatzkes, the fluorene series. V. 2,7-Dichlorofluorene, A., i, 781.
- the fluorene series. IV. Synthesis of isodiphenic acid, A., i, 792.
- Sieglitz, Adolf. See also *Fritz Mayer*.
- Siegwart, Joseph. See *Hermann Siedinger*.
- Sierp, Fr. W. See *Rudolf Friedrich Weinland*.
- Sieverts, Adolf, and A. Hermstorf, detection of hydrogen cyanide in air, A., ii, 224.
- Silberrad, Oswald, researches on sulphuryl chloride. I. Influence of catalysts: a convenient method of chlorinating benzene, T., 2029.
- Silver, Leonard. See *William Arthur Bone*.
- Simon, F., new forms of Soxhlet extraction apparatus, A., ii, 501.
- Simmonds, Charles, obituary notice of, T., 542.

- Simmonds, Nina. See McCollum.
- Simmons, C. W., and C. Bochner, chromatograms, A., i.
- Simmons, Thomas Bassett, jun.
- Simms, H. S. See Simon, Holo, and
- Simon, Holo, action of glycerol, A., i, 204.
- Simon, Karl. See Hans Lecuer.
- Simon, Louis Jacques. See Georges Chavanne, and Ch. Mauguin.
- Simon, O. See Walther Diltthey.
- Simons, Harold Lester. See Harry Lian Fisher.
- Simons, Lewis, β -ray emission from thin films of the elements exposed to Röntgen rays, A., ii, 77.
- Simonsen, John Lionel, the essential oil from *Andropogon javanicus*, Jones, and the constitution of piperitone, T., 1644.
- essential oil from the leaves of *Skin-mia laurcula*, A., i, 515.
- Simonsen, John Lionel, and Madgar Gopal Rau, synthesis of 1:6-dihydroxy-2-methylanthraquinone, T., 1339.
- Simpkin, Neville. See Lionel Gay Radcliffe.
- Simpson, Edward Sydney, a graphic method for the comparison of minerals with four variable components forming two isomorphous pairs, A., ii, 53.
- Sinai, Martha. See Fritz Zuckerkandl.
- Sindlinger, F. See Felix Mach.
- Singalowsky, N. See H. Wolff.
- Singer, Erno. See Anton Skrabal.
- Singh, Bawa Kartar, phototropism in solution, I., A., i, 351.
- Singh, Bawa Kartar, and Miri Lal, studies in substituted quaternary azonium compounds containing an asymmetric nitrogen atom. IV. Additive compounds of thiocarbamide with azonium iodides, T., 210.
- Singh, Bawa Kartar, Mahan Singh, and Jivan Lal, studies on the dependence of optical rotatory power on chemical constitution. IV. Aryl derivatives of bisiminocampbor, T., 1971.
- Singh, Mahan. See Bawa Kartar Singh.
- Sisson, Warren R. See Willey Denis.
- Jöberg, Knud, enzymatic investigations of certain green algae, A., i, 210.
- Jöberg, Martin. See Bror Holmberg.
- Skaupy, Franz, the separation of gases and the production of pressure differences in the positive column of the electrical discharge in rare gases, and its explanation on the basis of elastic impacts of electrons; application to the case of isotopes of the rare gases, A., ii, 15.
- influence of the ionisation of chemical reactions in the inert gases, A., ii, 113.
- chemical affinity of the inactive gases, A., ii, 198.
- transport numbers of liquid amalgams, A., ii, 298.
- specific heat and inner atomic vibrations, A., ii, 500.
- Skita, Aladar [with H. Kaden, Hans Häuter, and W. Schneider], determination of the configuration of stereoisomeric polymethylenes, A., i, 503.
- Skita, Aladar [with F. F. Nord, J. Reichert, and P. Stukart], dihydrothebaine, dihydrothebainone, and dihydrothebabinol, A., i, 684.
- Skrabal, Anton, and Grete Muhry, hydrolysis of ethyl oxamate, A., ii, 581.
- Skrabal, Anton, and Otto Ringer, the rate of hydrolysis of ethyl orthoformate, A., ii, 581.
- Skrabal, Anton, and Erna Singer, alkaline hydrolysis of esters of symmetrical homologues of oxalic acid, A., ii, 34.
- Slator, Arthur, yeast crops and the factors which determine them, T., 115.
- Sligh, T. S., jun., the construction of platinum resistance thermometers and immersion heating coils of low lag, A., ii, 299.
- Slosse, A., physiological significance of formic acid, A., i, 203.
- Slyke, Donald D. van, acidosis. XVII. The normal and abnormal variations in the acid-base balance in the blood, A., i, 588.
- Slyke, Donald D. van. See also J. Harold Austin.
- Smart, Bertram James, obituary notice of, T., 544.
- Smekal, Adolf, absorption boundaries of the L-series, A., ii, 144.
- relationship of the actinium series branch of the uranium-radium series, A., ii, 149.
- spatial atomic models, A., ii, 189.
- fine structure of the Röntgen spectra, A., ii, 232.

- Smekal, Adolf**, Rutherford's discovery of a new light atom nucleus, A., ii, 478.
fine structure of Röntgen spectra.
II. *L*-series, A., ii, 615.
fine structure of Röntgen spectra.
III. *M*-series and the principle of selection, A., ii, 615.
explanation of Röntgen spectra and the constitution of the atom, A., ii, 671.
- Smiles, Samuel**, and **Ernest Wilson McClelland**, derivatives of 3-oxy(1)-thionaphthen, T., 1810.
- Smiles, Samuel**, and (Miss) **Jessie Stewart**, *m*-dithiobenzoic acid, T., 1792.
- Smirnov, Alexander P.**, the constitution of *N*-aryl derivatives of 4-pyridone, A., i, 594.
paired cyclamines. I. 2-(2 Quinolyl)-cyclamines; valency formula of quinoline, A., i, 812.
- Smirnov, Alexander P.** See also **P. Karrer** and **Alfred Werner**.
- Smith, J. W. A. Haagen**, the estimation of gold by cupellation and the examination of large quantities of gold destined for the manufacture of coinage, A., ii, 354.
- Smith, C. J.** See **Alexander Oliver Rankine**.
- Smith, Charles R.**, osmosis and swelling of gelatin, A., i, 749.
- Smith, Dary Bickford, & Cie.** See **Paul René de Wilde**.
- Smith, Donald P.**, electrical conduction of an hydrogen alloy, A., ii, 423.
- Smith, H. D.**, radiating potentials of nitrogen, A., ii, 77.
- Smith, Henry George.** See **John Read**.
- Smith, Homer W.**, nature of secondary valence. II. Partition coefficients, A., ii, 315.
nature of secondary valence. I., A., ii, 324.
- Smith, J. D. Main.** See **Gilbert Thomas Morgan**.
- Smith, Julian P.** See **Gerald Eyre Kirkwood Branch**.
- Smith, James Hollingsworth**, estimation of sodium hyposulphite, A., ii, 652.
- Smith, James Leonard Erierley.** See (Sir) **William Jackson Pope**.
- Smith, L.**, the efficiency of certain fractionating columns in distillation in a vacuum; some laboratory designs, A., ii, 675.
- Smith, Leighton B.** See **Arthur Ames Noyes**.
- Smith, L. W., J. H. Means**, and **M. N. Woodwell**, distribution of carbon dioxide between cells and plasma, A., i, 474.
- Smith, Millard**, estimation of chlorides in trichloroacetic acid filtrates from whole blood and plasma, A., ii, 272.
- Smith, Robert Christie.** See **Robert Wright**.
- Smith, Samuel C.** See **Alvin Sawyer Wheeler**.
- Smith, Todd O.**, and **O. Butler**, relation of potassium to the growth of plants, A., i, 482.
- Smith, W. C.** See **V. E. Grotlich**.
- Smits, Andreas**, the validity of the law of partition for the equilibrium between a mixed crystal phase and a coexisting liquid, A., ii, 246.
- Smits, Andreas**, and **R. Ph. Beck**, electromotive behaviour of magnesium, I., A., ii, 402.
- Smits, Andreas**, and **G. J. de Grijter**, the electromotive behaviour of aluminium. II., A., ii, 371.
- Smits, Andreas, L. van der Lande**, and **P. Bouman**, existence of hydrates in aqueous solutions, A., ii, 385.
- Smits, Andreas**, and **J. Spuyman**, the thermo-electric determination of transition points, A., ii, 246.
a thermo-electrical differential method for the determination of transition points of metals at comparatively low temperatures, A., ii, 856.
- Smolaka, N.**, the esterification of di-methylaminoisophthalic acid. I. Preparation of methyl 4-aminoisophthalate, A., i, 418.
the esterification of dimethylaminoisophthalic acid. II. Preparation of 4-dimethylaminoisophthalic acid. III. Esterification of 4-dimethylaminoisophthalic acid, A., i, 674.
- Smorodincev, A.**, extractive substances of muscular tissue. XX. Carnosin and its compounds. I., A., i, 192.
- Smyth, F. Hastings**, and **Howard S. Roberts**, system, cupric oxide, cuprous oxide, oxygen, A., ii, 93.
- Smyth, F. Hastings.** See also **Howard S. Roberts**.
- Smyth, H. D.**, and **Karl T. Compton**, the effect of fluorescence and dissociation on the ionising potential of iodine vapour, A., ii, 564.
- Snapper, I.**, formation and excretion of hippuric acid in man, A., i, 834.
- Snoo, K. de**, the amount of amino-acid in blood, A., i, 823.
- Snyder, Robert S.** See **Ray E. Neidig**.
- Société Anonyme de Produits Chimiques**, production of acetaldehyde from acetylène, A., i, 706.

- Société Chimique des Usines du Rhône**, new process of manufacture of β -dialkylaminoethylaminobenzoic alkyl esters, A., i, 26.
- preparation of dialkylaminoethyl derivatives of theobromine, A., i, 128.
- preparation of *n*-butyl *p*-aminobenzoate, A., i, 244.
- production of hydroxyaldehydes and their derivatives, A., i, 420.
- preparation of ethylidene diacetate, A., i, 535.
- preparation of disubstituted 2:4-diketotetrahydro-oxazoles, A., i, 737.
- Society of Chemical Industry in Basle**, acyl derivatives of *p*-aminophenyl ethers, A., i, 339.
- preparation of compounds of the morphine alkaloids with derivatives of barbituric acid, A., i, 354.
- preparation of dibenzylaniline-4:4'-disulphonic acid and ethylbenzylaniline-4'-sulphonic acid, A., i, 715.
- preparation of aralkyl esters of 2-phenylquinoline-4-carboxylic acid, A., i, 737.
- preparation of α -aminoanthraquinone, A., i, 871.
- Soddy, Frederick**, the atomic volume of isotopes, A., ii, 698.
- Söderquist, Ragnar**, optically active α -amino- $\alpha\beta$ -diphenylethanes, A., i, 235.
- Scop, Leo**, a Soxhlet apparatus for extraction with warm solvents, A., ii, 212.
- Sörensen, Sören Peter Lauritz**, the albumin of the white of hens' eggs, A., i, 749.
- Sohl, G. T.** See **Thomas G. Thompson**.
- Somieski, Karl**. See **Alfred Stock**.
- Sommelet, Marcel**, condensation of esters with the esters of α -bromo-acids in the presence of zinc; ethyl γ -ethoxy-acetoacetate, A., i, 646.
- Sommelet, Marcel**, and **P. Courroux**, a method of preparation of succinylsuccinic ester, A., i, 540.
- Sommelet, Marcel**, and **J. F. Hamel**, the condensation of chloroacetic ester with magnesium in the presence of ethyl acetate, A., i, 646.
- Sommerfeld, A.**, criticism of Bohr's theory of light emission, A., ii, 567.
- Sundel, J. A.**, estimation of carbon in aluminium, A., ii, 654.
- Sonn, Adolf**, certain derivatives of paeonol, A., i, 279.
- lichen products. III. Determination of the constitution of divaricol, A., i, 414.
- Sonn, Adolf**, and **Fritz Benirschke**, preparation of certain alkyloxyquinolines and of their tetrahydro-derivatives, A., i, 805.
- Sordelli, Alfredo**. See **Raul Wernicke**.
- Soulan, H.**, the influence of light on the conductivity of fluorescent liquids, A., ii, 238.
- South Metropolitan Gas Company**, and **Harold Stanier**, improvements in the manufacture of certain naphthylamine-sulphonic acids, A., i, 564.
- Späth, Ernst**, synthesis of sinapin, A., i, 28.
- luturine, A., i, 50.
- constitution of laudanone, A., i, 50.
- Späth, Ernst**, and **Kudolf Göhring**, synthesis of ephedrine, ψ -ephedrine, their optical antipodes and racemic compounds, A., i, 45.
- Spencer, James Frederick**, Cottrell's ebullioscopic apparatus, A., ii, 240.
- Spencer, Leonard James**, identity of Trechmann's " β -tin" with stannous sulphide, A., ii, 266.
- Speyer, Edmund, Elsa Freund, Walter Freund, Helmut Freund, and Lisette Freund**, preparation of a derivative of thebaine, A., i, 803.
- Speyer, Edmund**, and **Sigurd Siebert**, reduction of dihydrothebaine, A., i, 685.
- Speyer, Edmund**. See also **Martin Freund**.
- Spiers, Charles William**. See **Mucimilian Nierenstein**.
- Spresen, (Mlle) Hélène**. See **Eugène Ludwig**.
- Spiro, Karl**, β -oxidation and paired linkings, A., i, 639.
- Spoehr, Herman Augustus**, estimation of the pentose sugars, A., ii, 714.
- Spry, Fletcher H.** See **James Munroe Bell**.
- Spruyman, J.** See **Andreas Smits**.
- Staden, A. von**. See **Adolf Windaus**.
- Stäger, H.** See **Vollmar Kohlschütter**.
- Stahrfoss, Knut**, the fluorene series, A., i, 335.
- action of *o*-aminothiophenol on *o*-quinones. II. and III., A., i, 457, 464.
- Staub, Karl**. See **Otto Ruff**.
- Stallmann, Otto**. See **Karl Brand**.
- Stanek, Vladimir**, micro-chemical estimation of nitrogen by Kjeldahl's method, A., ii, 557.
- Stanier, Harold**. See **South Metropolitan Gas Company**.
- Stanley, G. H.**, cyanometric assay of nickel, A., ii, 352.

- Stark, Johannes**, criticism of Bohr's theory of the emission of light, A., ii, 232.
- Staszewski, W.**, measurement of electro-osmotic tensions in liquids of low conductivity, A., ii, 13.
- Stătescu, C.**, the number of molecules per cubic centimetre of oxygen obtained by the dispersion, A., ii, 399.
- Staub, H.**, enzyme formation [in the organism], A., i, 475.
- Staudinger, Hermann**, aliphatic diazo-compounds. XXIII. Formulation of ethyl diazoacetate and of diazoanhydrides, A., i, 327.
- Staudinger, Hermann** [with *Helmuth Wilhelm Klever, St. Bereza, and A. Corvi*], ketens. XXXV. Action of diphenylketen on thioketones, A., i, 34.
- Staudinger, Hermann, Alice Gaule, and Joseph Siegwart**, aliphatic diazo-compounds. XX. Reduction by means of hydrogen in presence of palladium, A., i, 323.
- Staudinger, Hermann, Henri Goldstein, and E. Schlenker**, oxalyl chloride. VI. Friedel and Crafts' reaction with oxalyl chloride, A., i, 432.
- Staudinger, Hermann**, oxalyl chloride. VII. Friedel and Crafts' reaction with iminochloride derivatives of oxalic acid, A., i, 433.
- Staudinger, Hermann, and L. Hammet**, aliphatic diazo-compounds. XXI. Constitution of the hydrazones, especially of ethyl mesoxalatehydrazone, A., i, 324.
- Staudinger, Hermann, L. Hammet, and Joseph Siegwart**, aliphatic diazo-compounds. XXII. Reduction of ethyl diazoacetate, A., i, 326.
- Staudinger, Hermann, G. Rathsam, and F. Kjelsberg**, ketens. XXXIV. Diphenylthioketen, A., i, 33.
- Staudinger, Hermann, and Theodor Reber**, ketens and aliphatic diazo-compounds, A., i, 245.
- Staudinger, Hermann, and Joseph Siegwart**, thionbenzoyl chloride, A., i, 25.
- Staudinger, Hermann**, action of aliphatic diazo-compounds on thioketones, A., i, 43.
- Staudinger, Hermann, and Joseph Siegwart** [with *E. Anthes, H. Bommer, and G. Gerhardt*], action of thio-acid chlorides on aliphatic diazo-compounds, A., i, 43.
- Stavenhagen, Alfred, and E. Schuchard**, behaviour of explosive mixtures of gases at low pressures, A., ii, 33.
- Stechow, M.** See *Arthur Hantzsch*.
- Stedman, Edgar**, a new degradation product of physostigmine, T., 891.
- Steel, Carolyn.** See *Charles Walter Porter*.
- Steenbock, H.** See *E. G. Gross, and Edwin Bret Hart*.
- Steenhauer, A. J.** See *Leopold von Itallie*.
- Stehle, Raymond L.**, gasometric estimation of nitrogen and its application to the estimation of the non-protein nitrogen of blood, A., ii, 123.
- Stehle, Raymond L.**, gasometric estimation of nitrogen, A., ii, 557.
- Stehle, Raymond L.**, gasometric estimation of urea in urine, A., ii, 605.
- Stehle, Raymond L., and Arthur C. McCarty**, effect of hydrochloric acid ingestion on the composition of the urine in man, A., i, 755.
- Steibelt, Werner.** See *Richard Willstätter*.
- Steiger, A. L. von**, the summation method of molecular refraction, particularly in the case of aromatic hydrocarbons, A., ii, 473.
- Steiger, George.** See *J. T. Pardee*.
- Steigmann, Albert**, a new transport apparatus, A., ii, 13.
- Steigmann, Albert**, reduction of sodium silver thiosulphate by hyposulphite. I. and II., A., ii, 46, 147.
- Steigmann, Albert**, photographic colloid-chemical crystallisation processes, A., ii, 568.
- Steinberg, R. A.**, effect of zinc and iron compared with that of uranum and cobalt on the growth of *Agar-gillus*, A., i, 482.
- Steinführer, Paul.** See *Hartwig Franzen*.
- Steinkopf, Wilhelm**, thiophen-mercury compounds, A., i, 639.
- Steinkopf, Wilhelm** [with *Hans Winter-nitz, Wilhelm Roederer, and Anna Wolynski*], the contact decomposition of cholesterol; the theory of petroleum formation, A., i, 24.
- Steinkopf, Wilhelm, and Kurt Buchheim**, action of cyanogen bromide on triphenylphosphine, A., i, 469.
- Steinkopf, Wilhelm, and Johannes Müller**, organic compounds of arsenic. II. Action of cyanogen bromide on triethylarsine, A., i, 401.
- Steinkopf, Wilhelm, and Anacarie Otto**, the halogenation of thiophen by means of acetylchloroamide and acetyl bromoamide, A., i, 579.
- Steinkopf, Wilhelm, and Hse Schnbart**, thiophen series. X. The preparation and reduction of thiophen ketones, A., i, 579.

- Steinkopf, Wilhelm**, and **Gustav Schwen**, organic compounds of arsenic. IV. Action of alkyl haloids on cacodyls and a new mode of formation of tetra-alkyl-(aryl)-arsonium triiodides, A., i, 694.
preparation of methyl bromide, A., i, 841.
- Steinkopf, Wilhelm**, and **Arthur Wolfram**, organic compounds of arsenic. III. The action of cyanogen bromide on phenylecyclopentamethylenearsine, A., i, 471.
- Steinruck, A.** See **Alfred Heiduschka**.
- Steinwehr, Helmut** von, dependence of the heat of vaporisation of water on the temperature, A., ii, 167.
- Steinwehr, Helmut** von. See also **Wilhelm Jaeger**.
- Stemmer, Johann**. See **Karl Fleischer**.
- Stenison, Nils**, doublets of the K-series of the Rontgen spectra, A., ii, 140.
- Stenison, Nils**. See also **Maane Siegbahn**.
- Stenström, Wilhelm**. See **William Duane**.
- Stephens, J. G.**, a new method of measuring molecular weights, A., ii, 324.
- Stephenson, Marjory**, differentiation of the yellow plant pigments from vitamin-A, A., i, 295, 484.
- Stephenson, R. E.**, the effect of organic matter on soil reaction, A., i, 916.
soil acidity and bacterial activity, A., i, 916.
- Stepp, Wilhelm**, detection of formic acid in human blood, A., i, 203.
- Stepp, Wilhelm**, and **Wilhelm Engelhardt**, the quantitative estimation of acetone and acetaldehyde in the same solution, A., ii, 69.
- Stepp, Wilhelm**, and **Hermann Zambusch**, intermediate carbohydrate metabolism in man. II. Quantitative behaviour of formic acid in normal and pathological blood, A., i, 381.
- Stern, Ernst**, vegetable glues, A., i, 226.
- Stern, Rosa**. See **Friedrich Feigl**.
- Stettbacher, A.**, mercuric azide, A., ii, 48.
- Steuding, Walter**, the iodine molecule and the emission of its band spectrum, A., ii, 381.
temperature and band spectra, A., ii, 667.
- Stendel, Hermann**, a simple method of preparation of creatine from meat extract, A., i, 192.
- Stendel, Hermann**, and **E. Peiser**, yeast-nucleic acid, A., i, 66.
a new method of cleavage of nucleic acids, A., i, 136.
- Stevens, Henry Potter**, sols and gels of vulcanised caoutchouc, A., i, 735.
- Stevenson, Arnold**. See **George Armand Robert Kon**.
- Stevenson, Helen C.** See **Walter H. Eddy**.
- Stewart, G. R.** See **D. R. Hoagland**.
- Stewart, (Miss) Jessie**. See **Samuel Smiles**.
- Stiegler, A.** See **Karl Höfler**.
- Stiegler, Adolf**, general colloidal chemistry. II. Time change of colloidal stannic acid after peptisation with alkali hydroxide solution, A., ii, 577.
- Stieglitz, Julius, Morris S. Kharasch**, and **Martin Hanke**, preparation of 5:5'-mercuri-bis-3-nitro-1-hydroxy-phenylarsinic acid, A., i, 523.
- Stieglitz, Julius**. See also **George Ross Robertson**.
- Stillman, Edgar**. See **J. Harold Austin**.
- Stillmunkes, A.** See **Charles Rabaut**.
- Stobbe, Hans**, and **Paul Schmitt**, photochemistry of alkyl iodides and iodine solutions, A., ii, 76.
- Stock, Alfred, Fridt Henning**, and **Ernst Kuss**, vapour tension tables for measurement of temperatures between + 25° and - 185°, A., ii, 432.
- Stock, Alfred**, and **Karl Somieski**, silicon hydrides. IX. Reactions with alkali metals, A., ii, 330.
silicon hydrides. X. Compounds containing nitrogen, A., ii, 399.
- Stock, Alfred**, and **Friedrich Zeidler**, boron trimethyl and boron triethyl, A., i, 328.
- Stock, Heinrich**. See **Robert Schwarz**.
- Stoermer, Richard**, and **E. Laage**, natural and synthetic truxillic and truxinic acids. III., A., i, 179.
the seventh acid of the truxillic acid series, neotruxinic acid. V., A., i, 182.
- Stoermer, Richard**, and **F. Scholtz**, the sixth acid of the truxillic acid series, ζ-truxinic acid (zetruxinic acid). IV., A., i, 180.
- Stoll, L.** See **Alfred Thiel**.
- Stollé, Robert**, preparation of N-substituted oxindoles, A., i, 596.
- Stollé, Robert**, and **E. Knebel**, new method for the preparation of coumarandiones, A., i, 578.
- Stollenwerk, Wilhelm**. See **Wilhelm Biltz**.
- Stoltzenberg, Hugo**, and **Margarete Stoltzenberg-Bergius**, melanin and humus. I. The formula of p-benzoquinone; the thermal rearrangement in the quinone series; the physiological significance of quinone humus, A., i, 32.

- Stoltzenberg-Bergius, Margarete.** See *Hugo Stoltzenberg*.
- Stoquer,** influence of temperature on the absorbent properties of soils, A., i, 914.
- Stosius, Karl,** and *Karl Wiesler*, the position of the double bond in ricinoleic acid, A., i, 7.
- Stransky, Emil,** occurrence of chelidonic acid, A., i, 85.
- Stransky, Emil.** See also *Er. Schiff*.
- Straub, Hermann,** and *Klothilde Meier*, blood gas analyses. V. The influence of alkaline earths on haemoglobin and cell colloids, A., i, 72.
- blood gas analyses. VII. The influence of boron, aluminium, and lanthanum on haemoglobin and the cell, A., i, 72.
- blood gas analyses. VIII. The influence of some digitalis substances on the ion penetration in human erythrocytes, A., i, 72.
- Straus, Fritz,** and *Leo Lemmel*, Δ^1 -dihydronaphthalene. III. Modes of formation of Δ^1 -dihydronaphthalene, A., i, 170.
- Straus, Fritz,** and *August Rohrbacker*, [with *Leo Lemmel*], Δ^1 -dihydronaphthalene. IV. Conversion of Δ^1 -dihydronaphthalene into ulicyclic substitution products of tetrahydronaphthalene, A., i, 171.
- Strauss, Eduard,** and *Rudolf Grützner*, protein chemistry. II. Iodoglobulin, A., i, 200.
- Strauss, Eduard.** See also *F. Blum*.
- Strauss, Frank A.** See *Ralph H. McKee*.
- Strecker, Wilhelm,** and *Karl Conradt*, the separation of mercury from other elements by distillation from hydrochloric acid solution, A., ii, 64.
- Strecker, Wilhelm,** and *Heinz Thiene-mann*, the action of ozone on alkali metals, ammonia, and substitution products of ammonia, A., ii, 44.
- Streel, (Mlle.) du Vicier de.** See *E. Fauré-Fremiet*.
- Strohmann, H.,** and *S. Flintzer*, rapid estimation of carbamide in urine, blood, and other physiological fluids, A., ii, 664.
- Strong, Ralph K.,** the isotopism of mesothorium and radium and the separation of these elements from barium, A., ii, 294.
- Strowd, W. H.,** the forms of nitrogen in soja bean nodules, A., i, 387.
- the estimation of nitrites and nitrates in plant tissue, A., ii, 59.
- Struck, Erich.** See *Karl W. Rosenmund*.
- Strufe, Karl.** See *Heinrich Biltz*.
- Stubbings, Wilfrid Victor.** See *James Kenner*.
- Studinger, Josef.** See *Hans Kreis*.
- Stuer, Bernhard Conrad.** See *Chemische Fabrik Rhenania Akt.-Ges.*
- Stuhlmann, Hans Caesar.** See *Gerhart Jander*.
- Stukart, P.** See *Aladar Skita*.
- Subkova, S.** See *S. Kostychev*.
- Suda, Keiji.** See *Sôjirô Kawase*.
- Sudborough, John Joseph,** and *D. D. Karvé*, action of methyl and ethyl alcohols on esters of 2,6-dinitro- and 2,4,6-trinitro-benzoic acids, A., i, 666.
- Sudborough, John Joseph,** *N. Pictou,* and *D. D. Karvé*, additive compounds of arylamines with nitro-derivatives of naphthalene, A., i, 557.
- Sudborough, John Joseph.** See also *B. Dasannacharya,* and *D. D. Karvé*.
- Sugden, Samuel,** on reduction by metals in acid solutions. I. The reduction of acid ferric sulphate solutions by zinc and magnesium, T., 233.
- the determination of surface tension from the rise in capillary tubes, T., 1483.
- Sugii, Yoshio,** preparation of 3:4-dihydroxyphenylalanine, A., i, 346.
- Sumner, James B.,** a new reagent for the estimation of sugar in urine, A., ii, 526.
- Sumner, James B.** [with *V. A. Graham*], dinitrosalicylic acid; a reagent for the estimation of sugar in normal and diabetic urine, A., ii, 564.
- Sunder, Charles,** and *Marcel Bader*, anthraquinone and its derivatives as reductive catalysts, A., i, 676.
- Sure, Barnett,** amino-acids in nutrition. III. Is proline a growth-limiting factor in the proteins of peas (*Pisum sativa*)? what nucleus in zein is responsible for supplementing these proteins? A., i, 526.
- Suszka, J.** See *Karol Dzierowski*.
- Svanberg, Olof,** the velocity of growth of lactic acid bacteria in different hydrogen-ion concentrations, A., i, 80.
- the preparation of highly active saccharase (invertase) preparations. II. and IV., A., i, 202.
- sensitiveness of saccharase towards ultra-violet light and towards oxidising agents, A., i, 628.
- Svanberg, Olof,** and *Hans von Euler*, toxic action in enzymic processes. III. The influence of copper sulphate on the autolysis of the yeast cell, A., i, 81.

- Svanberg, Olof.** See also *Hans von Euler, Oskar Klein, and Gustav Tammann.*
- Svedberg, Theodor.** See *Johs. Lindeman.*
- Swanson, Charles O.,** hydrocyanic acid in Sudan grass, A., i, 913.
- Swanson, W. W.** See *Francis B. Kingsbury.*
- Swarts, Frédéric,** experiments with ω -trifluorotoluene, A., i, 656.
- catalytic hydrogenation of organic fluorine derivatives, A., i, 657.
- Sweet, Joshua Edwin.** See *C. W. Miller.*
- Sweet, S. S.** See *Samuel Edward Sheppard.*
- Swenson, Torsten,** photo-bromination of toluene and xylene, A., ii, 291.
- photoelectric investigations with salt solutions. II and III, A., ii, 483.
- Swientoslawski, Wojciech,** modifications of the adiabatic calorimeter, A., ii, 379.
- new data in thermochemistry, A., ii, 535.
- the ratio of the densities of liquid and vapour, A., ii, 535.
- a new constant characterising the system vapour-liquid, A., ii, 535.
- necessity of bringing concordance into the thermochemical data of organic compounds, A., ii, 679.
- Swientoslawski, Wojciech, and Helena i Zofia Praszowska,** divergence between adiabatic and ordinary [thermochemical] measurements, A., ii, 620.
- Swoboda, Frederick K.,** a method for the estimation of vitamin in connexion with determinations of vitamin in glandular and other tissues, A., i, 76.
- Szécsi, P.** See *László Zechmeister.*
- Szent-Györgyi, Albert von,** protein reactions. II. The action of electrolytes on serum albumin, A., i, 65.
- protein reactions. III. Cataphoresis experiments with micro-organisms, A., i, 290.
- protein reactions. IV. The physical chemistry of agglutination, A., i, 290.
- protein reactions. I. A microscopical cataphoresis method, A., ii, 11.
- Szilagyi, Julius von,** properties of potassium arseno-thiosulphate; structural formula of trithionic acid, A., ii, 199.
- some alkali antimony thiosulphates, A., ii, 207.
- T.**
- Tacke, Ida.** See *David Holde.*
- Taeger, Kurt.** See *Richard Meyer.*
- Takagi, Seisi,** sesquiterpene groups. II. Machilol and atracyloli, A., i, 732.
- Takagi, Seisi.** See also *Yasuhiko Asahina.*
- Takahashi, Eiiji,** proteins of the muscle of *Haludis gigantea*, Gmelin, A., i, 832.
- Takahashi, Katsumi,** constitution of linolic acid, A., i, 303.
- Takahashi, Yasuyo,** metallographic investigation of the system bismuth sulphide-antimony sulphide, A., ii, 208.
- Takegami, Shiro,** equilibria of reciprocal salt pairs, sodium chloride, magnesium sulphate and sodium sulphate, magnesium chloride at 25°, A., ii, 30.
- the octahydrate of magnesium sulphate, A., ii, 698.
- Talbot, Fritz B.** See *Willey Denis.*
- Taliani, M.,** quantitative test of the thermal stability of glyceryl nitrate explosives, A., ii, 521.
- Tammann, Gustav,** the action of light on sparingly soluble oxides in solutions of silver salts, A., ii, 147.
- significance of recrystallisation, A., ii, 172.
- phenomena in the formation of space lattices composed of two different species of atoms, particularly in the formation of mixed crystals of silver and gold, A., ii, 173.
- liberation of gas from cold-worked metals during recrystallisation, A., ii, 202.
- exchange of ions on the surface of minerals, A., ii, 211.
- periodic irregularities of physical properties in homologous series, A., ii, 430.
- carbon formed by the action of mercury on carbon tetrachloride, tetrabromide, and tetraiodide, A., ii, 450.
- the behaviour of carbon towards silicon, A., ii, 401.
- the composition of eutectics and the limiting members of mixed crystal series, A., ii, 494.
- the chemical properties of alloys, A., ii, 617.
- Tammann, Gustav, and Olof Svanberg,** the quantitative action of enzymes, A., i, 68.
- Tampier, Louis.** See *Charles Mouren.*
- Tampke, H.** See *F. Krauss.*
- Tani, Munro.** See *Gregory Paul Baxter.*
- Tanret, Georges,** the presence of quinic acid in the leaves of some conifers, A., i, 295.

- Tanret, *Georges*, the influence of ammonium molybdate on the rotatory power of some sugars, A., i, 493.
the influence of ammonium molybdate on the rotatory power of mannitol, A., i, 544.
an ammonium molybdoquiniate, A., i, 674.
- Tansley, *L. Beaumont*, spiral classification of the elements, A., ii, 322.
- Tartar, *Herman V.*, and *Waldo L. Semon*, the reaction between copper and nitrogen peroxide, A., ii, 336.
- Tashiro, *Shiro*, production of ammonia in nerve, A., i, 635.
- Tassily, *Eugène, H. Pénau*, and *E. Roux*, the preparation of nickel carbonyl, A., ii, 699.
- Taucher, *R.* See *Walther Diltthey*.
- Taverne, *H. J.*, preparation of anhydrous tin tetrachloride, A., ii, 51.
- Taylor, *A. H.* See *E. B. Rosa*.
- Taylor, *Guy L.*, estimation of nitrogen oxides in gases, A., ii, 128.
- Taylor, *Hugh Stott*, and *Robert Martin Burns*, adsorption of gases by metallic catalysts, A., ii, 630.
- Taylor, *Hugh Stott*, and *George St. John Perrott*, the thermochemical data of cadmium chloride and iodide, A., ii, 303.
- Telfer, *Stephen Veitch*, the influence of free fatty acids in the intestinal contents on the excretion of calcium and phosphorus, A., i, 700.
- Tempel, *H.* See *Sigismund Reich*.
- Tendick, *F. H.* See *Roger Adams*.
- Teodossia, (*Mlle.*) *Virginie*, action of ammonium citrate on alkaline-earth sulphates, A., i, 540.
separation and estimation of the alkaline-earth metals, A., ii, 521.
- Teodossiu, (*Mlle.*) *Virginie*. See also *Constantin Kollo*.
- Terenin, *J.*, the normal orbit of the electron in the atom of mercury, A., ii, 669.
- Terres, *Ernst*, certain nitroamines of the anthraquinone series, A., i, 676.
effect of oxygen on the limits of inflammability of inflammable gases and vapours, A., ii, 99.
- Terres, *Ernst*, and *Hans Weiser*, compounds of ammonia and carbonic acid in equilibrium with their aqueous solutions, A., ii, 448.
- Terroine, *Émile F.*, and *H. Barthélémy*, composition of the egg of the brown frog (*Rana fusca*) at the time of laying, A., i, 336.
- Terroine, *Émile F.*, and *René Wärmser*, influence of temperature on the utilisation of dextrose in the development of *Aspergillus niger*, A., i, 837.
- Tertsch, *Hermann*, crystallographical observations on atomic structure, A., ii, 24.
- Terwen, *A. J. L.*, apparatus for the estimation of small quantities of urea, A., ii, 70.
- Tesche, *H.* See *Alfred Benrath*.
- Teschendorf, *Werner*, new formation of the diastatic ferment outside the living cell, A., i, 163.
- Tetralin G. m. b. H., preparation of reduction products of nitrotetrahydronaphthalenes, A., i, 406.
preparation of polycyclic hydroaromatic hydrocarbons, A., i, 409.
preparation of derivatives of tetrahydro- β -naphthylamine, A., i, 558.
preparation of *ar*-tetrahydronaphthalenesulphonic acids, their chloride and derivatives, A., i, 659.
- Thaer, *D.* See *Rud. Seeliger*.
- Thannhauser, *Siegfried J.*, and *Erich Ottenstein*, nuclein metabolism. XII. The hydrolysis of thymus-nucleic acid by means of picric acid; the composition of thymic acid, A., i, 521.
nuclein metabolism. XI. The action of human liver-extract on nucleotides (guanosine, adenosine, xanthosine), A., i, 526.
- Thannhauser, *Siegfried J.*, and *P. Sachs*, yeast-nucleic acid, A., i, 201.
nuclein metabolism. X. The demineralisation of triphosphonucleic acid, A., i, 201.
- Thaulow, (*Mlle.*) *Karin*. See *Erich Billmann*.
- Theodorescu, *G. P.* See *G. G. Lengi-nescu*.
- Théodorides, *Ph.*, the thermal variation of the coefficient of magnesianisation of some anhydrous chlorides and an oxide in the solid state, and the theory of magneton, A., ii, 15.
- Thevenon, *L.*, reaction of "saccharin," A., ii, 69, 357.
- Thiel, *Alfred*, and *E. Schulte*, binary equilibria with solid carbon dioxide, A., ii, 178.
- Thiel, *Alfred*, and *L. Stoll*, a substitute for Thoulet's solution, A., ii, 17.
- Thiele, *Mar.* See *Alfred Schaaarschmidt*.
- Thienemann, *Heinz*. See *Wibbels Strecker*.

- Thierfelder, Hans, and Erich Schemp**, specific rotation of the active sodium salts of γ -hydroxyphenylbutyric acid and the [asymmetric] reduction of benzoylpropionic acid in the body, A., i, 511.
- Thiery**, potassium zinc ferrocyanide as a precipitant for urines; its application to the separation and estimation of uric acid and xanthine bases, A., ii, 527.
- Thies, W.** See **Karl von Auwers**.
- Thieslin, R.**, the urinary elimination of the hydrochloride of diethylaminoethyl *p*-aminobenzoate (novocaine, syncaine, etc.), A., i, 206.
- Thirring, Hans**, force of cohesion of the diamond, A., ii, 339.
- Thivolle, L.** See **G. Fontès**.
- Thomann, H.** See **P. Karrer**.
- Thomas, C. J.** See **John Mellanby**.
- Thomas, Ethel Mary.** See (Mrs.) **Ida Suedley MacLean**.
- Thomas, F.** See **Douglas Frank Twiss**.
- Thomas, Pierre**, the estimation of tryptophan in protein material, A., i, 61.
- the proteins of yeast, A., i, 292.
- the colorimetric estimation of tyrosine and the phenolic number of proteins, A., ii, 607.
- Thomas, Richard, and Edward Thomas Williams**, the catalytic oxidation of ferrous salts in acid solutions, T., 749.
- Thomas, William**, inorganic complex salts. I. Potassium ferrioxalate and potassium cobaltmalonate, T., 1110.
- Thomas, William.** See also **Alexander Findlay**.
- Thompson, J. C.**, latent heat of vaporisation, A., ii, 679.
- specific heat of vapours; determination of specific heat of a vapour at constant pressure, Cp, A., ii, 679.
- Thompson, Leonard**, preparation of some hydrazines, A., i, 133.
- Thompson, Thomas G., and John H. Black**, intersolubility of chloropierin and water, A., i, 3.
- Thompson, Thomas G., John H. Black, and G. T. Sohl**, the insolubility of *pp'*-dichlorodiethyl sulphide and ethyl alcohol, A., i, 390.
- Thoms, Hermann, and W. Deckert**, a new hydroxystearic acid from "hardened" castor oil, A., i, 219.
- Thoms, Hermann, and L. Hess**, preparation of arsenic trihydride of high percentage purity, and its estimation, A., ii, 110.
- Thoms, Hermann, and R. Pietrulla**, synthesis and constitution of meconic acid, A., i, 264.
- Thoms, Hermann, and Kurt Ritsert**, derivatives of anesthesin [ethyl *p*-aminobenzoate], A., i, 343.
- Thomson, G. P.**, the spectrum of hydrogen positive rays, A., ii, 285.
- application of anode rays to the investigation of isotopes, A., ii, 675.
- Thomson, (Sir) Joseph John**, the structure of the molecule and chemical combination, A., ii, 252.
- Thomson, William**, estimation of indigotin, A., ii, 471.
- Thorna, Percy Cyril Lesley**, the solubility of ethyl ether in solutions of sodium chloride, T., 262.
- Thornton, William M., jun., and James E. Chapman**, tervalent titanium. I. Volumetric estimation of iron by titanous salts, A., ii, 279.
- Thorpe, Jocelyn Field.** See **Christopher Kalk Ingold, and Woodford Stanley Gower Plucknett Norris**.
- Thresh, John Clough**, the so-called action of water on lead, A., ii, 551.
- Thro, W. C., and Marie Ehn**, calcium in the blood in diseases of the skin, A., i, 993.
- Thrun, Walter E., and Perry Fox Trowbridge**, new method for the estimation of histidine, A., ii, 225.
- Thüringer, V.**, estimation of iodides in the presence of iodates, A., i, 211.
- Thüringer, V.** See also **Stefan Minovici**.
- Thurber, F. H.** See **Charles Walter Porter**.
- Tian, J.**, a theory of slow hydrolysis of salts, A., ii, 439.
- a cause of dispersion of the colloid in an important class of hydrosols, A., ii, 439.
- the stability and the reversibility of the transformations of the hydrosols obtained by hydrolysis of salts, A., ii, 440.
- Tiebe, E.** See **Julius Tröger**.
- Tiede, Erich**, inorganic luminescence phenomena. III. Phosphorescence of boric acid, A., ii, 75.
- Tiede, Erich, and Friedrich Buscher**, inorganic luminescence phenomena. II. Luminescent boron nitride. (Balmann's aethogen) and the excitation of luminescence by flames, A., ii, 74.
- Tiede, Erich, and W. Jenisch**, the thermal decomposition of acetylene in contact with metallic catalysts, A., ii, 100.

- Tiede, Erich**, and **Arthur Schleede**, phosphorescence and fusion of sulphides of the second group, particularly zinc sulphide, A., ii, 263.
the cathodic reduction of dissolved elementary nitrogen, A., ii, 328.
- Tietze, O.** See **Ludwig Claisen**.
- Tiffeneau, Jules**, mercury di-n-butyl and some of its derivatives, A., i, 655.
- Tiffeneau, Marc**, and **Et. Ardely**, α -bromohexoylcarbamide and homologous straight chain bromoacyl derivatives of carbamide, A., i, 775.
- Tiffeneau, Marc**, and **E. Cannag **, cyclohexane compounds of mercury, A., i, 472.
- Tiffeneau, Marc**, and **Alex. Or skhoff**, the pinacolic nature of transpositions in the α -phenyl- β -methylpropane- $\alpha\beta$ -diol series, A., i, 243.
the hydrobenzoin, semihydrobenzoin, and semipinacolic transpositions; the dehydration of alkylhydrobenzoins, A., i, 565.
semipinacolic and semihydrobenzoinic transpositions in the α -phenyl- β -methylpropane- $\alpha\beta$ -diol series. Action of dilute acids on the glycol and its oxide; elimination of HI from the corresponding iodohydrin, A., i, 788.
- Tiffeneau, Marc**. See also **Alex. Or skhoff**.
- Tilley, F. W.**, the germicidal value of some of the chlorine disinfectants, A., i, 151.
- Tillmans, Josef**, and **Anna Bohrmann**, estimation of the alkalinity and of phosphates in the ashes of foods, A., ii, 348.
- Tim nez Diaz, C.** See **Leonor Michaelis**.
- Timmermans, Jean**, a paraffin hydrocarbon contained in commercial benzene, A., i, 490.
piezoelectric analysis. II. Investigation of systems of which the temperature of solidification can pass through a maximum, A., ii, 239.
piezochemical analysis. III. Crystallisation under increased pressure and its relationship to the mutual solubility of liquids, A., ii, 239.
freezing points of organic substances. III., A., ii, 430.
freezing points of organic substances. IV. New experimental determinations, A., ii, 439.
freezing points of organic substances. V. The odd and even alternation and the lowest melting point in a homologous series, A., ii, 431.
- Timmermans, Jean**, and **Th. J. F. Mattaar**, freezing points of organic substances. VI. New experimental determinations, A., ii, 622.
- Tingle, Alfred**, volumetric estimation of aluminium in its salts, A., ii, 522.
- Tipper, George Howlett**, pitchblende, monazite, etc., from Bengal, A., ii, 269.
- Tisdale, W. B.** See **F. R. Jones**.
- Tisdall, Frederick F.**, estimation of the phenolic substances in urine, A., ii, 67.
- Tisdall, Frederick F.**, and **Benjamin Kramer**, estimation of sodium, potassium, calcium, and magnesium, in urine, blood, and faeces, A., ii, 635.
- Tisdall, Frederick F.** See also **Benjamin Kramer**.
- Titley, Alan Francis**. See **William Henry Perkin, jun.**
- Titus, E. Y.** See **W. R. Hainsworth**.
- Tizard, Henry Thomas**, and **Alfred Reginald Boeree**, the volumetric estimation of mixtures of acids and of bases, and of polybasic acids or bases, T., 132.
- Tizard, Henry Thomas**, and **A. G. Marshall**, estimation of aromatic hydrocarbons in mixtures of hydrocarbons, A., ii, 280.
- Tobin, Elise**. See **Roger Frederik Brunel**.
- Tochtermann, Haas**. See **Kurt Heinrich Meyer**.
- Tolman, Richard C.**, statistical mechanics applied to chemical kinetics, A., ii, 99.
theory of unimolecular reactions, A., ii, 248.
principle of similitude and the entropy of polyatomic gases, A., ii, 381.
- Tolstoi, Edward**. See **Walter G. Kim**.
- Tomaschek, Rudolf**, phosphorescent zinc sulphide, A., ii, 588.
- Tomita, Masaji**, the behaviour of the residual nitrogen of egg-white and of yolk on incubation, A., i, 829.
behaviour of dextrose added to the white of eggs during incubation, A., i, 829.
the formation of *d*-lactic acid in the animal organism, A., i, 829.
the influence of the addition of dextrose and alanine to egg-white on the formation of *d*-lactic acid during incubation, A., i, 830.
the formation of sarcosine acid in the animal organism; the formation of *d*-lactic acid by the autolysis of hen's eggs, A., i, 830.

- Tomita, Masaji**, chemical composition of the egg-shell of the silkworm moth, A., i, 830.
- methylation in the animal organism.
- I. Methylation of pyridine in the organism of the rabbit, A., i, 834.
- methylation in the animal organism.
- II. The site of the methylation of pyridine in the animal organism, A., i, 834.
- Tomkinson, E.**, colour and molecular formula of water and ice. I., A., ii, 396.
- metallic hydrides and the action of hydrogen on the metals. I., A., ii, 453.
- Tommasi, Giuseppe**, analysis of lencites and leucitic minerals, A., ii, 132.
- tables giving alcoholic strength from the specific gravity. II. From 25% to 50% of ethyl alcohol by weight, A., ii, 136.
- Tomoshige, Naajiyo**, metallographic investigation of the system bismuth-selenium, A., ii, 207.
- Toms, Harold**. See **Arthur Fairbourne**.
- Toni, G. de**. See **H. Labbé**.
- Toni, G. M. de.**, colloidal calcium phosphate, A., ii, 334.
- Tonnet, J.** See **M. Loeper**.
- Toporescu, Ec.**, the carrying down of lime and magnesia by precipitates of chromic oxide, A., ii, 353.
- Topp, Ernst**. See **Heinrich Biltz**.
- Tour, R. S.**, apparatus for gas analysis by absorption and titration, A., ii, 125.
- Tramm, Heinrich**. See **Alfred Coehn**.
- Trampler, A.** See **Paul Wenger**.
- Trambe, Isidor**, and **Paul Klein**, colloidal condition of sparingly soluble and slightly soluble substances in water and other solvents; experimental confirmation of Gibbs's principle, A., ii, 653.
- Traube, Wilhelm**, and **Emil Reubke**, the equilibrium, hydrofluoric acid-sulphuric acid-fluorosulphonic acid, A., ii, 539.
- Traube, Wilhelm**, and **Walter Schulze**, the highest oxides of calcium and barium, A., ii, 548.
- Traubenberg, Heinrich Ransch von**, direct determination of the range of α -rays in solids, A., ii, 143.
- Trantz, Max**, the significance of velocity constants from the point of view of the quantum theory, A., ii, 180.
- Travers, a new process for the estimation of fluorine in the cold**, A., ii, 706.
- a new method of estimating silica, A., ii, 710.
- Treadwell, W. D.**, electrometric titration of hypochlorous acid, A., ii, 410.
- electrolytic estimation of gold and its separation from copper, palladium, and platinum, A., ii, 416.
- Treadwell, W. D.** [with **Alfred Rheiner**], reductions with zinc and cadmium in volumetric analysis, A., ii, 523.
- Treadwell, W. D.** See also **August L. Bernoulli**.
- Treblar, H.** See **Leopold Ruzicka**.
- Tréhin, Robert**, specific heats of some organic liquids, A., ii, 287.
- Treichel, O.** See **W. König**.
- Trelles, Rogelio A.** See **Federigo Reichert**.
- Trendelenburg, Wilhelm**, simple method of gas analysis for physiological purposes, A., ii, 460.
- Triffitt, (Miss) Phyllis Mary**. See **Holland Crompton**.
- Tröger, Julius**, and **A. Berndt**, the action of diazonium salts on benzene- and *p*-toluenesulphonyl derivatives of acetic acid, ethyl acetate, acetonitrile, and acetamide, A., i, 743.
- Tröger, Julius**, and **K. Bönicks**, angostura alkaloids, A., i, 121.
- Tröger, Julius**, and **E. Tiebe**, the volumetric estimation of the methoxyl group, A., ii, 135.
- Troensegaard, N.**, the demonstration of pyrrole compounds in the proteins, A., i, 201.
- Trowbridge, Perry For**. See **Walter E. Thrun**.
- True, Rodney H.**, the function of calcium in the nutrition of seedlings, A., i, 837.
- Tschermak, Gustav**, orthoclasses containing barium, A., ii, 121.
- composition of aluminous augites, A., ii, 121.
- analysis of rampelite, A., ii, 121.
- chemical constitution of zeolites, A., ii, 703.
- Tschirsch, Alexand.**, odoriferous substances and the sense of smell, A., i, 755.
- Tschitschibabin, Alexei E.**, the action of methyl iodide on 2- and 4-aminopyridines, A., i, 451.
- Tschitschibabin, Alexei E.**, **R. A. Konowalowa**, and **A. A. Konowalowa**, tautomerism of α -aminopyridine and its derivatives, A., i, 456.
- Tsujimoto, Mitsunaru**, a new method for the separation of the highly unsaturated fatty acids in fish oils, A., i, 78.
- Tsvetkova, E.** See **S. Kostychev**.

- Tubandt, Carl**, electrical conductivity in solid crystallised compounds. II. Transportation and wandering of ions in uniform solid electrolytes, A., ii, 426.
- Tubandt, Carl**, and **Sophie Eggert**, electrical conductivity in solid crystallised compounds. IV. The electrical conductivity of solid silver sulphide-silver mixtures, A., ii, 480.
- Tubandt, Carl**, **Sophie Eggert**, and **Gustav Schibbe**, electrical conductivity in solid crystallised compounds. III. The electrical conductivity of silver sulphide and cuprous sulphide, A., ii, 480.
- Tucker, Stanley Horwood**. See **William Henry Perkin, jun.**
- Türk, Walter**, serecin and the estimation of its constituents, A., i, 137.
- Turner, Eustace Ebenezer**. See **George Macdonald Bennett**, and **George Joseph Burrows**.
- Turner, W. D.**, and **A. M. Howald**, methylamines from methyl alcohol and ammonium chloride, A., i, 97.
- Tutin, Frank**, behaviour of pectin towards alkalis and pectase, A., i, 751.
- Twiss, Douglas Frank**, the discontinuity of vulcanisation in the presence of organic accelerators, A., i, 876.
- Twiss, Douglas Frank**, and **F. Thomas**, the relative activity of various allotropic forms of sulphur towards caoutchouc, A., i, 876.
- Twitchell, E.**, precipitation of solid fatty acids with lead acetate in alcoholic solution, A., ii, 662.
- U.**
- Ugarte, Trifon**, estimation of morphine in opium and certain of its preparations, A., ii, 225, 360.
estimation of caffeine in yerba mate, coffee, tea, kola nut, and guaraná, A., ii, 470.
- Uhlig, Johannes**, a diopside containing manganese from the Radautal near Harzburg, A., ii, 121.
- Ulich, L. H.**, and **Roger Adams**, the reaction between acid haloids and aldehydes. III., A., i, 391.
- Ullmann, Fritz**, preparation of 1:4-chloronitroanthraquinones, A., i, 421.
- Ullmann, Fritz**, and **Margarete Ettisch**, investigation of 2:3-dichloro- α -naphthaquinone, A., i, 269.
- Ultée, A. J.**, amylin and lupeol in the caoutchouc from *Ficus vogelii*, A., i, 420.
- Unna, P. G.**, composition of horn and epidermis, A., i, 637.
- Urbach, Franz**, periodic system, atomic structure, and radioactivity, A., ii, 251.
- Urbain, Georges**, the energetic foundations of the atomic theory, A., ii, 543.
- Urk, H. W. van**, the active constituents of *Capsella bursa pastoris*, A., i, 488.
estimation of alcohols and phenols in ethereal oils by esterification with pyridine, A., ii, 660.
- Ursum, Werner**. See **Carl Neuberg**.
- Uyeda, Yoshisuke**, and **Ebenezer Edward Reid**, a sulphide acid; butyl ether of thioglycollic acid [butylthiolacetic acid], A., i, 8.
- V.**
- Vaillant, Pierre**, the variations with temperature of the [electrical] conductivity of calcium sulphide, A., ii, 78.
- Vallée, C.** See **M. Polonovski**.
- Vandenberghé, Henri**. See **E. Chrétien**, **Daniel Florentin**, and **J. Froidevaux**.
- Vanossi, Reinaldo**, estimation of dissolved oxygen in water, A., ii, 517.
- Varga, Georg**, electrical properties and peptisation of colloids, A., ii, 271.
- Vargolici, V.** See **A. Ionescu**.
- Varicák, Sctozara**, influence of some compounds on the viscosity of solutions of dextrose in water, A., ii, 352.
- Vary, (Mlle.) M.** See **Pictor Anger**.
- Vaubel, (Johann) Wilhelm**, dimethylglyoxime reactions of iron and cobalt, A., ii, 596.
- Vavon, Gustave**, the velocity of reaction in hydrogenations by platinum black, A., ii, 542.
- Vavon, Gustave**, and **J. Desrie**, the transformation of phenol into catechol, A., i, 505.
- Vecchiotti, Luigi**, action of mercuric acetate on p -toluidine. II., A., i, 902.
- Veen, A. L. W. E. van der**, aristolochin and optechin nitrates, A., i, 45.
- Vegard, L.**, role of water of crystallisation and the structure of alums, A., ii, 24.
the spectrum of hydrogen positive rays, A., ii, 285.
constitution of mixed crystals and the space filling of the atoms, A., ii, 627.
explanation of Röntgen spectra and the constitution of the atom, A., ii, 674.

- Veil, (*Mila*) S., allotropic varieties of oxides, A., ii, 423.
- Veimarn. See Weimarn.
- Velich, V., volumetric estimation of tin with potassium bromate, A., ii, 658.
- Venable Francis P., and D. H. Jackson, hydrolysis of zirconyl chloride and sulphate at 0° and 20°, A., ii, 118.
- Venkateschar, B. See E. Parr Metcalfe.
- Verein Chemischer Fabriken Mannheim, preparation of sulphur dioxide, A., ii, 198.
- Vereinigte Chininfabriken Zimmer & Cie, preparation of hydrogenated cinchona alkaloids containing selenium, A., i, 267.
- preparations of alcohols and amino-alcohols of the quinoline series, A., i, 355.
- preparation of quinolyl ketones, A., i, 360.
- Verhulst, J. H. See W. H. Peterson.
- Verkade, P. E., the action of micro-organisms on organic compounds. II. The solubility of some organic acids in fatty oils, A., i, 290.
- chemistry of acetic acid. I. The preparation and properties of the hydroxy-anhydro-acid, A., i, 496.
- the velocity of hydration of anhydrides of dicarboxylic acids. 1., A., ii, 318.
- the velocity of hydration of anhydrides of dicarboxylic acids. II. Methylated succinic anhydrides, A., ii, 318.
- Verne, J., the oxidation of carotene from crustacea and the presence of a substance in the oxidation product which gives a cholesterol reaction, A., i, 77.
- Vernon, Richard Henry, organic derivatives of tellurium. IV. Action of ammonia and the alkalis upon α -di-methyltelluronium di-iodide, T., 687.
- obituary notice of, T., 2132.
- Vernon, Richard Henry. See also (*Miss*) Isabel Ellie Knaggs, and Frederick George Mann.
- Vézes, Maurice, the composition of French oil of turpentine, A., i, 427.
- Viehöver, Arno, Joseph F. Clevenger, and Clara Olin Ewing, mustard seeds and substitutes. I. Chinese colza, *Brassica campestris chinensis*, Viehöver, A., i, 212.
- Vietense, Karl. See Ernst Sieburg.
- Vignon, Léa, water gas, A., i, 217.
- Ville, Lucien. See Marcel Delépine.
- Villegas, Leonor Sarlo, apparatus for ultra-filtration according to Gans, A., ii, 29.
- Vines, H. W. C., coagulation of the blood. I. The rôle of calcium, A., i, 525.
- coagulation of the blood. II. The clotting complex, A., i, 905.
- Vining, Dudley Cloete. See Gilbert Thomas Morgan.
- Violle, H., slimy lactic *Streptococcus*; a non-pathogenic species of lactic ferment, A., i, 386.
- Virtanen, Arturi J., pinabietic acid, a definite resin acid. III. Constitution of pinabietic acid, A., i, 669.
- Virtanen, Arturi J. See also Georg Wiegner.
- Vischniac, Ch. See A. Goris.
- Vixseboxse, H., the phenomena presented by allotropic organic substances in contact with a solvent, A., ii, 179.
- Vladesco, R. See Gabriel Bertrand.
- Vlès, Fred., action of cyanogen derivatives on oxyhaemoglobin, A., i, 281.
- Vlès, Fred. See also André Mayer.
- Vogel, Rudolf, dendritic crystallisation and its influence on the strength of metallic alloys, A., ii, 493.
- tungsten-nickel alloys, A., ii, 512.
- formation of twins in the surface layers of metals during cold working, A., ii, 547.
- Vogelenzang, E. H., the accuracy obtainable with varnished weights, A., ii, 39.
- Vogt, Th. See Alexander Gutbier.
- Voik, H. See Fr. Boedecker.
- Vollrath, Kurt. See Wilhelm Schneider.
- Vollweiler, E. H. See Roger Adams.
- Volmer, M., high vacuum methods in chemistry, A., ii, 896.
- Voorhis, C. C. van. See Arthur H. Compton, and Duncan MacRae.
- Vorbrunt, W., utilisation of nitrogen and of phosphorus in the mycelium of *Aspergillus niger*, A., i, 702.
- Vorländer, Daniel, the crystalline-liquid properties of α -unsaturated ketones, A., i, 867.
- Vortisch, Erhard, the system barium chloride-potassium chloride-sodium chloride, A., ii, 85.
- mixed crystals (K,Na)Cl in ternary systems, A., ii, 86.
- Vortisch, Erhard. See also Theodor Liebisch.
- Vosburgh, Warren C., optical rotation of mixtures of sucrose, dextrose, and levulose, A., ii, 233.
- Voswinckel, Hugo. See C. A. Schleussner.

- Votoček, Emil**, a new form of galactose-phenylmethylhydrazone, A., i, 544.
the polyoses in rotted beetroots, A., i, 704.
- Vournazos, Alexander Ch.**, the bismutho-ironocyanides; new complex compounds, A., i, 232.
- Vürtheim, A.**, the composition of potassium platinechloride, A., ii, 61.
gravimetric estimation of potassium by the cobalt method, A., ii, 710.
- Vaillaume, M.** See *Augustin Bontaric*.
- Vyskocil, Ant.**, the speed of reaction of metallic magnesium in aqueous solutions, A., ii, 389.
- W.**
- Wacek, Anton von.** See *Ernst Philipp*.
- Wacker, Alexander**, use of dichloroethylene as solvent, A., i, 298.
- Wacker, Leonhard**, and *K. F. Beck*, the cholesterol content of human and cow's milk, A., i, 639.
- Wadsworth, Raymond V.**, estimation of theobromine in cocoa and its products, A., ii, 225.
- Wachert, M.**, ternary aluminium alloys, A., ii, 508.
- Waelle, C.** See *Siegmund Reich*.
- Wälti, A.** See *P. Karrer*.
- Wagenmann, K.**, a simple, exact, and rapid electrolytic estimation of cobalt in ammoniacal solution and its application to cobalt nitroso- β -naphthol, A., ii, 658.
- Wagner, Adolf.** See *Hartwig Franzen*.
- Wagner, H.** See *Heinrich Wieland*.
- Wagner, Mario Baste**, thermodynamics of mixtures, IV., V., VI., VII., and VIII., A., ii, 162, 361, 375.
theory of equations of condition. I., A., ii, 180.
- Waitz, J.** See *P. Karrer*.
- Wald, Franz**, determinations of the number of independent constituents of a system of substances, A., ii, 410.
- Walden, Paul**, degree of association of the molecules of binary salts in non-aqueous solutions, A., ii, 22.
connexion between the limiting [electrical] conductivity λ_∞ of binary electrolytes in non-aqueous solvents and the viscosity η_∞ of the latter: $\lambda_\infty \cdot \eta_\infty = \text{constant}$, A., ii, 160.
ionic velocities in non-aqueous solutions, A., ii, 170.
diameter of ions in non-aqueous solutions, A., ii, 171.
- Walden, Paul**, the power of solution and ionisation of non-aqueous solvents toward binary salts, A., ii, 309.
the limiting value λ_∞ of molecular conductivity in non-aqueous and aqueous solutions, A., ii, 423.
the relation between boiling point in the vacuum of the cathode light and critical temperature, A., ii, 423.
- Waldschmidt-Leitz, Ernst.** See *Richard Willstätter*.
- Walker, Eric Everard**, surface tensions of salts of the fatty acids and their mixtures, T., 1521.
- Walker, Hilda.** See *Evelyn Ashley Cooper*.
- Wallace, Thomas**, and *Alexander Fleck*, some properties of fused sodium hydroxide, T., 1839.
- Walle, H. van de**, the ethylenic isomerism of chlorobromoethylene, A., i, 491.
 $\alpha\beta$ -dichloro- α -bromoethylene, A., i, 491.
preparation of the stereoisomerides of $\alpha\beta$ -dichloro- α -bromoethylene, A., i, 491.
 $\alpha\beta$ -dichloro- $\alpha\beta$ -dibromoethylene, A., i, 491.
the chlorination of acetylene dibromide [$\alpha\beta$ -dibromoethylene] by antimony pentachloride, A., i, 492.
- Walpuski, Hans.** See *Karl Freutenberg*.
- Walter, H.** See *Friedrich L. Hahn*.
- Walton, C. F., jun.**, the preparation of rhamnose, A., i, 219.
- Walz, gas-absorption flask**, A., ii, 515.
- Wang, G.**, the metallic elements of the ancient Chinese, A., ii, 39.
the metallic compounds of the ancient Chinese, A., ii, 39.
- Waran, H. P.**, apparatus for the preparation of small quantities of pure nitrogen or carbon monoxide, A., ii, 546.
- Warburg, Otto**, and *Erwin Negelin*, the reduction of nitric acid in glass cells, A., i, 82.
the oxidation of cystine and other amino-acids in contact with blood charcoal, A., i, 230.
- Ward, Charles Frederick**, the use of aluminium chloride and ferric chloride in the preparation of phenolphthalein, T., 850.
- Ward, Charles Frederick.** See *St. Samuel Coffey*.
- Wark, Ian William.** See *John Ficker*.
- Warren, C. H.**, crystalline character of calcium carbide, A., ii, 549.

- Wartenberg, *H. von*, and *B. Sieg*, the mechanism of some combustions, *A.*, ii, 107.
- Wartenberg, *H. von*. See also *W. Mielenz*.
- Waer, *Ernst*, and *M. Lewandowski*, the phenylalanine series. I. Synthesis of 3,4-dihydroxyphenylalanine, *A.*, i, 788.
- Washburn, *Edward Wight*, *Frank F. Footitt*, and *Elmer N. Bunting*, dissolved gases in glass, *A.*, ii, 401.
- Washington, *Henry Stephens*, the chemistry of the earth's crust, *A.*, ii, 119.
- use of gold-palladium alloy for crucibles, *A.*, ii, 194.
- Washington, *Henry Stephens*, and *Herbert Eugene Merwin*, augite from Vesuvius and Etna, *A.*, ii, 212.
- Wasicky, *Richard*, the function of plant glucosides, *A.*, i, 295.
- Watanabe, *K.* See *E. Yoshitomi*.
- Waterhouse, *E. F.* See *Walter Raymond Schoeller*.
- Waterman, *Henry C.* See *Carl Oscar Johns*, and *David Bruce Jones*.
- Watson, *Edwin Roy*, and *Sikhishuan Dutt*, dyes derived from phenanthraquinone, *T.*, 1211.
- Watson, *Thomas*, and *Horace L. White*, an improved apparatus for use in Folin and Wu's method for the estimation of urea in blood, *A.*, ii, 358.
- Watson, *Thomas Leonard*, lazulite from Graves Mountain, Georgia, *A.*, ii, 701.
- Weber, *H. C. P.*, reduction of chromium and other difficultly reducible metals, *A.*, ii, 645.
- Weber, *H. H.*, the role of lactic acid in the production and resolution of muscle rigor, *A.*, i, 635.
- Weber, *I.* See *Phoebe A. Levene*.
- Weber, *Sophus*, critical constants of mercury, *A.*, ii, 699.
- Wehster, (*Miss*) *Dorothy*. See *Gilbert Thomas Morgan*.
- Webster, *T. Arthur*. See *Benjamin Moore*.
- Wechselmann, *Amely Camilla*, lactacidogen content of frog's muscle, *A.*, i, 529.
- Wedekind, *Edgar* [with *P. Hansknecht*], the magnetisability of the rare earths, *A.*, ii, 237.
- Wedekind, *Edgar*, and *Daniel Schenk*, action of organomagnesium compounds on arylsulphonic chlorides, *A.*, i, 664.
- Wehmer, *Carl*, preparation of fumaric acid, *A.*, i, 845.
- Wielock, *R.* See *Henri Gault*.
- Weigert, *Fritz*, optical properties of disperse systems. I. Colour changes through illumination, *A.*, ii, 289.
- Weigert, *Fritz*, and *Hans Fohle*, optical properties of disperse systems. II. Significance of the amicroscopic phase, *A.*, ii, 290.
- Weil, *Arthur*. See *Emil Abderhalden*, and *Hans Handovsky*.
- Weil, *E.* See *LeRoy McMaster*.
- Weimann, *Petr Petrovič von*, method of dispersion of cellulose in concentrated aqueous solutions of neutral salts, *A.*, i, 847.
- swelling and dispersion of cellulose in concentrated aqueous solutions, *A.*, i, 847.
- a new world of chemical compounds, *A.*, ii, 37.
- homoechemical compounds, *A.*, ii, 324.
- flame as example of a stationary dispersoid system, *A.*, ii, 539.
- universality of any given state as a consequence of the fundamental law of energetics, *A.*, ii, 545.
- Weinberg, *A. von*, the benzene [formula] problem. V. The benzene ring in substitution products, *A.*, i, 778.
- the benzene [formula] problem. IV. The naphthalene formula, *A.*, i, 781.
- breaking of halogen bonds, *A.*, ii, 165.
- Weinberg, *Abraham Albert*, influence of the nervous system on the excretion of creatinine; experiments on nervous and mental patients, *A.*, i, 639.
- Weingand, *E.* See *E. Blau*.
- Weinhagen, *Albert B.*, the muscarine question. II. ψ -Muscarine (synthetic muscarine), *A.*, i, 192.
- the diphenylamine reaction, *A.*, ii, 348.
- Weinland, *Rudolf Friedrich*, complex compounds of lead acetate, *A.*, i, 535.
- Weinland, *Rudolf Friedrich*, and *Fr. W. Sierp*, ferric-oxalic (malolic) acid compounds, *A.*, i, 537.
- Weiser, *Hans*. See *Ernst Terrea*.
- Weiser, *Harry B.*, adsorption by precipitates. IV., *A.*, ii, 625.
- Weiser, *Harry B.*, and *Allen Garrison*, oxidation and luminescence of phosphorus. I. and II., *A.*, ii, 243, 637.
- oxidation and luminescence of phosphorus. III. Catalytic action of vapours, *A.*, ii, 695.
- Weiser, *Harry B.*, and *Edmund Burrus Middleton*, adsorption by precipitates. III., *A.*, ii, 89.

- Weiss, Friedrich.** See **Otto Fischer.**
- Weiss, H.,** and **P. Laftte**, the interpenetration of solids, A., ii, 551.
- Weiss, Moriz**, the urine pigments. II. Urochromogen, A., i, 138.
- Weissenberger, Georg**, structures in disperse systems, A., ii, 578.
- Weitmeyer, Herbert.** See **Wilhelm Wislicenus.**
- Weitz, Ernst**, and **Annemarie Nelken** [with **R. Ludwig**], the free ammonium radicle. II. Benzylpyridinium, A., i, 804.
- Weitz, Ernst, Adolf Roth**, and **Annemarie Nelken**, the free ammonium radicle. I. Benzylpyridinium, A., i, 804.
- Weitz, Ernst**, and **Alfred Scheffer**, action of alkaline hydrogen peroxide on unsaturated compounds, A., i, 868.
transformations of ketoxido-compounds; formation of β -ketonic aldehydes from $\alpha\beta$ -unsaturated ketones, A., i, 869.
- Weitzel, A.**, losses in chlorine in the estimation of chlorine in organic compounds by incineration and their prevention, A., ii, 591.
- Weitzmann, Charles**, and **David Alliston Legg**, preparation of secondary butyl alcohol, A., i, 493.
manufacture of hydrocarbons [naphthenes], A., i, 712.
- Weller, H.** See **Karl von Auwers.**
- Weller, Richard**, action of bromine on dihydroquinine and dihydrocupreine, A., i, 265.
- Wells, P. V.**, turbidity standard of water analysis, A., ii, 56.
- Wells, Roger Clark**, the salt error of cresol-red, A., ii, 55.
carbon dioxide in water of the Gulf of Mexico, A., ii, 280.
- Welter, Georges.** See **Maurice Nicloux.**
- Wenger, Paul**, and **Jules Morel**, separation of silicon, tin, titanium, and zirconium by means of sodium carbonate, A., ii, 464.
- Wenger, Paul**, and **A. Trampler**, the estimation of total carbon and a new method of estimating graphitic carbon in ferrous alloys, A., ii, 519.
- Wenyon, C. M.**, action of "Bayer 205" on *Trypanosoma equiperdum* in experimentally infected mice, A., i, 908.
- Wenzel, G.** See **Emil Heuser.**
- Werner, Alfred, Jeanne E. Schwyzer**, and **Walter Karrer**, optically active cobalt salts with β -diketone residues in the complex, A., i, 224.
- Werner, Alfred**, and **Alexander P. Smirnov**, the stereochemistry of the ruthenium atom, A., i, 13.
- Werner, Louis F.**, the methiodides of the condensation products of some cyclic aldehydes with quinaldine and α -picoline, and their possible value as indicators in acidimetry, A., i, 54.
an alkylene and some alkyl haloids of 2-p-hydroxy-*m*-methoxystyrylquinoline, A., i, 443.
- Werner, Max.** See **Friedrich Doerincel.**
- Wernicke, Raul**, and **Alfredo Sordelli**, oligodynamic; activation of water by copper and its oxides, A., i, 758.
- Wertheim, E.** See **Frank Burnett Dains.**
- Wesson, L. G.**, conversion of pinene compounds into a mixture of isobornyl ester and camphene, A., i, 796.
- West, Ralph Winton.** See **John Valentine Backes.**
- Westbrook, Leon K.** See **Arthur Anna Noyes.**
- Wester, D. H.**, the specific action of the urase of *Canavalia*, A., i, 469.
microchemical examination of certain orchids for alkaloids and tannin, A., i, 486.
- Westphal, Wilhelma H.**, diameter of the atoms, A., ii, 394.
- Wetmore, A. S.**, estimation of chlorides in blood, A., ii, 126.
- Wetzel, W.**, formation of fluorite at the ordinary temperature, A., ii, 551.
- Weyland, Paul.** See **Heinrich Wieland.**
- Wheeler, Alvin Sawyer**, and **Samuel C. Smith**, ethers derived from the additive products of the nitro-anilins and chloral, A., i, 411.
- Wheeler, Richard Vernon.** See **John David Morgan.**
- Wheeler, T. Sherlock**, an improvement in the nomenclature of organic chemistry, A., i, 297.
- Wheeler, W. P.**, calcium metabolism, A., i, 474.
- Wherry, Edgar Theodore**, and **William F. Foshaag**, classification of the sulphate-salt minerals, A., ii, 120.
- Wherry, Edgar Theodore.** See also **Joseph Alfred Ambler.**
- Whineop, (Miss) Edith Mariel.** See **George Macdonald Bennett.**
- Whinyates, Leonard.** See **Frederick William Atack.**
- Whipple, Bertha K.**, water-soluble vitamin-B in cabbage and onions, A., i, 85.
- Whitby, A.**, and **J. P. Boardwood**, reactions of the xanthates, A., ii, 562.

- White, Edwin C.**, mercury derivatives of phthaleins, A., i, 71.
- White, Horace L.** See **Thomas Watson**.
- White, Mollie G.**, and **John W. Marden**, the surface tension of certain soap solutions and their emulsifying power, A., ii, 88.
- White, Woodford.** See **James Munsie Bell**.
- Whitehead, Hugh Robinson.** See **Pavitra Kumar Dutt**.
- Whitehorn, J. C.**, a system of blood analysis. II. Simplified method for the estimation of chlorides in blood or plasma, A., ii, 272.
- Whiteley, J. H.** See **A. F. Hallimond**.
- Whiteley, (Miss) Martha Annie.** See **John Valentine Backes**.
- Whiting, Albert L.**, and **Warren R. Schoonover**, nitrogen fixation by cowpeas and nodule bacteria, A., i, 208.
- Whiting, E. T.**, tetrachlorophenolphthalein, A., i, 31.
- Whitley, Edward.** See **Benjamin Moore**.
- Whitmore, Frank C.**, and **Edmund Burrus Middleton**, reaction of alkali haloids with mercury derivatives of phenol, A., i, 377.
- Whitner, Thomas Cobb, jun.**, and **Ebenzer Emmet Reid**, a sulphide alcohol, butylthioethyl alcohol, A., i, 300.
- some derivatives of butyl mercaptan and their mercuric iodide compounds, A., i, 300.
- Wichers, Edward**, preparation of pure platinum, A., ii, 648.
- Widmark, Erik Matteo Prochet**, kinetics of the ketonic decomposition of acetoacetic acid, A., ii, 183.
- Widmer, Fr.** See **P. Karrer**.
- Wieschmann, Ernst**, the theory of magnesium narcosis, A., i, 73.
- Wieckhorst, Hans.** See **Walther Borsche**.
- Wieger, Bruno.** See **Jakob Meisenheimer**.
- Wiegner, Georg**, colloid chemical aspects of the theory of indicators, A., ii, 387.
- Wiegner, Georg, J. Magasanik**, and **Arturi J. Virtanen**, augmented adsorption, A., ii, 244.
- Wieland, Heinrich**, bile salts. VII. Cholidanic acid, A., i, 118.
- additive reactions with nitrous gases, A., i, 552.
- the constitution of furoxans (glyoxime peroxides), A., i, 605.
- the alkaloids of the lobelia plant. I., A., i, 802.
- the mechanism of oxidative processes. IV., A., i, 889.
- Wieland, Heinrich** [with **A. Bernheim**, **P. Böhm**, and **C. Reisenegger**], nitrogen dioxide. I. Nitration with nitrogen dioxide, A., i, 778.
- Wieland, Heinrich**, and **Ewald Blümich** [with **Fritz Reindel**, and **C. Reisenegger**], the union of nitrogen trioxide and nitrogen peroxide with unsaturated compounds, A., i, 552.
- Wieland, Heinrich**, and **Ewald Blümich** [with **H. Wagner**], the addition of the higher oxides of nitrogen to the triple carbon linking, A., i, 554.
- Wieland, Heinrich**, and **Erich Boersch**, bile acids. IX. The mechanism of the dehydration of the bile acids, A., i, 178.
- Wieland, Heinrich**, and **Albert Kulenkampff**, bile salts. VI. Contributions to the decomposition of deoxybilianic acid, A., i, 112.
- Wieland, Heinrich**, and **Franz Rahn** [with **Fritz Reindel**], nitration, A., i, 782.
- Wieland, Heinrich**, and **Fritz Reindel**, terpinene "nitrosite," A., i, 553.
- Wieland, Heinrich**, and **Wilhelm Rheinheimer**, cyclic arsenic compounds of the aromatic series, A., i, 371.
- Wieland, Heinrich**, and **Paul Weyland**, bile acids. VIII. Lithocholic acid, A., i, 178.
- Wieland, Walter W.** See **Vernon K. Krieble**.
- Wiemann, B.** See **Walther Grimmer**.
- Wiener, Stella**, the technique of the estimation of phosphoric acid; the application of Pregl's method in serum analysis, A., ii, 347.
- Wiesler, Karl.** See **Karl Stosina**.
- Wietzel, Rudolf**, stability relations of the glass and crystal phases of silicon dioxide, A., ii, 504.
- Wijk, R. van.** See **Siegmund Reich**.
- Wijk, W. E. van**, some amides of acids of the sugar group; relation between constitution and rotatory power, A., i, 318.
- Wilde, Paul René de**, and **Darcy Bickford Smith & Cie**, preparation of ethyl nitrite, A., i, 150.
- Wildish, James E.**, dielectric constant of selenium oxychloride, A., ii, 78.
- Wilhelm, R. M.**, and **J. L. Finkelstein**, standardised method for the determination of solidification points, especially of naphthalene and paraffin, A., ii, 574.
- Wilke-Dörfurt, Ernst**, preparation of uranium compounds in the pure state, A., ii, 205.

- Wilkinson, John A., and I. A. Gibson, distillation of aqueous solutions of formaldehyde, A., i, 394.
- Willard, Hobart Hurd, and W. Ellwood Cake, perchloric acid as a dehydrating agent in the estimation of silica, A., ii, 60.
- iodometric estimation of amino-nitrogen in organic substances, A., ii, 128.
- Willard, Hobart Hurd, and Roy K. McAlpine, revision of the atomic weight of antimony; analysis of antimony bromide, A., ii, 405.
- Williams, Alexander Mitchell, forces in surface films. I. Theoretical considerations. II. Experimental observations and calculations. III. The charge on colloids, A., ii, 18.
- the pressure variation of the equilibrium constant in dilute solution, A., ii, 388.
- Williams, E. J., chloroform solutions of hydrogen chloride, A., ii, 195.
- Williams, Edward Thomas. See Richard Thomas.
- Williams, John W. See Eli Kennerly Marshall, jun.
- Williams, May. See John Addyman Gardner.
- Williams, Robert Steakhouse. See Elfrida Constance Victoria Mattick.
- Williamson, Erskine D. See Leason H. Adams.
- Willstätter, Richard, peroxylases. II., A., i, 138.
- preparation of perhydrophenyl-naphthylmethane-*o*-carboxylic acid, A., i, 177.
- Willstätter, Richard, and Mac Bommer, preparation of formaldehyde from ethylene, A., i, 93.
- complete synthesis of *r*-ecgonine and of tropinone, A., i, 122.
- Willstätter, Richard, and Adolf Pfannenstiel, succinylidiacetic ester, A., i, 91.
- Willstätter, Richard, and Fridt. Racke, invertase, A., i, 823.
- Willstätter, Richard, and Werner Steibelt, maltase. VI. Estimation of maltase in yeast, A., ii, 72.
- Willstätter, Richard, and Ernst Waldschmidt-Leitz, hydrogenation of aromatic compounds by the aid of platinum. V. Hydrogenated phenyl-naphthylmethanecarboxylic acids, A., i, 667.
- hydrogenation of aromatic compounds by the help of platinum. IV. The dependence of catalytic hydrogenation on the presence of oxygen, A., ii, 185.
- Willmott, A. J., vegetable assimilation and respiration. XIV. Assimilation by submerged plants in dilute solutions of bicarbonates and of acids; an improved bubble-counting technique, A., i, 911.
- Wilms, Iring. See Walter Adolf Roth.
- Wilsey, R. B., crystal structure of silver haloids, A., ii, 548.
- Wilson, Carl Henry. See Gregory Paul Baxter.
- Wilson, Ernest, measurement of low magnetic susceptibility by an instrument of new type, A., ii, 81.
- Wilson, John Arthur, and Ervin J. Kern, estimation of tannin, A., ii, 719.
- Wilson, J. Walter. See Philip H. Mitchell.
- Wilson, Leonard Philip, obituary notice of, T., 571.
- Wilson, Robert E., some new methods for the determination of the vapour pressure of salt hydrates, A., ii, 376.
- Wilson, Robert E., W. Grenville Horsch, and Morril A. Youtz, the electrolytic production of sodium and potassium permanganates from ferromanganese, A., ii, 643.
- Windaus, Adolf, and O. Dalmer, β -2-furylthylamine and β -tetrahydro-2-furylthylamine, A., i, 117.
- Windaus, Adolf, and F. Kianhardt, a method for the degradation of acids of the glutaric series, A., i, 352.
- Windaus, Adolf, and A. von Staden, cholesterol. XXXI. The differing behaviour of certain stereoisomeric derivatives of cholesterol, A., i, 667.
- Windle, P. B. See Charles Thomsen Bennett.
- Winkler, J. See Walther Diltthey.
- Winkler, Ludwig Wilhelm, gravimetric analysis. XIV. Estimation of sulphuric acid in the presence of calcium, phosphoric acid, and chromium, A., ii, 57.
- quantitative analysis. XV. Estimation of barium as barium sulphate, A., ii, 62.
- water analysis. V. [Estimation of sulphuric acid], A., ii, 126.
- estimation of nitric acid, A., ii, 274.
- detection of arsenic, A., ii, 275.
- water analysis, A., ii, 413.
- gravimetric analysis. XVII. Estimation of zinc, A., ii, 521.
- gravimetric analysis. XVIII. and XIX. Determination of calcium. I. and II., A., ii, 559, 656.
- Winsvold, A. See Emil Rensner.
- Winternitz, Hans. See Wilhelm Steinkopf.

- Wintgen, Robert**, determination of the refraction of dissolved substances, particularly colloidal substances, A., ii, 137.
- Wintgen, Robert**, and **Karl Krüger**, the equilibrium, gelatin-hydrochloric acid, A., ii, 247.
- Winther, Chr.**, two peculiar luminescence [phenomena], A., ii, 670.
- Wintzell, Teodor**. See **Bror Holmberg**.
- Wirth, Th.**, estimation of water in alcohols, A., ii, 651.
- Wirth, Th.** See also **Adolf Grün**.
- Wislicenus, Hans**, colloidal chemistry of wood, its constituents and their formation, A., i, 84.
- Wislicenus, Wilhelm**, and **Robert von Schrottér**, isomerism of formylphenylacetic esters. VI. Alkylation of formylphenylacetic ester, A., i, 672.
- Wislicenus, Wilhelm**, and **Herbert Weitemeyer**, reduction of fluorene-glyoxylic ester, A., i, 511.
- Witham, Ernest**. See **James Kenner**.
- Witt, J. C.**, action of sodium sulphide on ferrie oxide, A., ii, 403.
- Wittek, Herbert**. See **Heinrich Biltz**.
- Wittek, Robert**. See **Robert Kremann**.
- Wittelsbach, Walter**. See **Karl Hess**.
- Witka, Franz**. See **Adolf Grün**.
- Witzemann, Edgar J.**, disodium phosphate as a catalyst for the quantitative oxidation of dextrose to carbon dioxide with hydrogen peroxide, A., i, 160.
- law of probability applied to the formation of fats from carbohydrates, A., ii, 250.
- Wöber, A.**, toxic action of compounds of arsenic, antimony, and fluorine on cultivated plants, A., i, 213.
- volumetric estimation of polysulphide-sulphur, A., ii, 274.
- Wöhler, Lohar**, and **O. Balz**, the determination of the valency scale of iron, cobalt, nickel, copper, manganese, tin, and tungsten by means of their water vapour equilibrium, and of the dissociation pressure of the oxides of these metals, A., ii, 633.
- Wöhlisch, Edgar**, true molecular volume of liquid organic compounds and its dependence on the structure of the molecule, A., ii, 536.
- Wohl, Alfred**, preparation of phthalic anhydride, A., i, 418.
- Wohl, Alfred**, and **K. Blumrich**, action of dilute mineral acids on cellulose, A., i, 164.
- Wohl, Alfred**, and **K. Jaschinowski**, derivatives of acetylenediacetal, A., i, 304.
- Wohl, Alfred**, and **K. Jaschinowski**, further experiments on the bromination of unsaturated compounds with N-bromoacetamide, A., i, 317.
- Wolcott, Elson R.**, a new crystalline form of potassium chlorate, A., ii, 332.
- Wolf, Charles George Lewis**, influence of the reaction of media and of the presence of buffer salts on the metabolism of bacteria, A., i, 208.
- Wolf, Ludwig**. See **Alfred Heiduschka**.
- Wolff (Mde.)**, furfurylideneamphor and some of its derivatives, A., i, 514.
- the molecular refraction and the specific rotatory power of furfurylideneamphor and some of its derivatives, A., i, 511.
- Wolff, E.** See **Carl Neuberg**.
- Wolff, H.**, and **N. Singalowsky**, analysis of gold, A., ii, 68.
- Wolff, W. W.** See **Max Bergmann**.
- Wolfram, Artur**, apparatus for filtration in anhydrous or indifferent gases, A., ii, 395.
- Wolfram, Artur**. See also **Wilhelm Steinkopf**.
- Wolfram, Fritz**. See **Nikolaus Lyon**.
- Wolski, P.** See **Wolfgang Ostwald**.
- Wolters, J. J.** See **Ernst Cohen**.
- Wolynski, Auroa**. See **Wilhelm Steinkopf**.
- Wood, A. B.**, long-range particles from thorium active deposit, A., ii, 294.
- Wood, Cyril Christian**. See **Henry Rondel Le Sueur**.
- Wood, Robert Williams**, hydrogen spectra from long vacuum tubes, A., ii, 665.
- Woodman, Herbert Ernest**, comparative investigation of the corresponding proteins of cow and ox serum, cow's colostrum, and cow's milk by the method of protein racemisation, A., i, 625.
- Woodward, Elsie**. See **Charles Edwin Corfield**.
- Woodward, Harold E.**, and **Carl Lucius Alsberg**, detection of volatile alkylamines in the presence of ammonia and of volatile tertiary alkylamines in the presence of volatile primary and secondary alkylamines, A., ii, 358.
- Woodwell, M. N.** See **L. W. Smith**.
- Woog, Paul**, the dimensions of the molecules of fatty oils and some phenomena of molecular solutions, A., ii, 575.
- Woollett, G. H.**, aristol, A., i, 340.
- Woollett, G. H.** See also **William Howard Hunter**.
- Wormall, Arthur**. See **Paritra Kumar Dutt**.

- Worrall, David E.**, the addition of aromatic amines to bromonitrostyrene, A., i, 411.
- Worrall, David E.** See also *Tenney L. Davis*.
- Woytacek, Carl**, distillation apparatus for small quantities of liquid, A., ii, 165.
- Wrede, Fritz**, synthesis of a tetrasaccharide containing sulphur, A., i, 12.
- the synthesis of sugars containing sulphur and selenium, A., i, 161.
- Wren, Henry**, and **Edward Wright**, studies in the resolution of racemic acids by optically active alcohols. II. The resolution of atrolactic and α -hydroxy- β -phenylpropionic acids by *L*-menthol, T., 798.
- Wrenshall, Richard**. See *Arthur L. Dean*.
- Wright, C. H.** See *Otto Maass*.
- Wright, Edward**. See *Henry Wren*.
- Wright, Robert**, and **Robert Christie Smith**, the effect of temperature on platinum black and other finely-divided metals, T., 1633.
- Wright, Sidney**. See *Alan Wilfrid Cranbrook Menzies*.
- Wüschmidt, J.**, thermal analysis of binary and ternary alloys, A., ii, 646.
- Wulff, Georg**, nature of the cleavage of crystals, A., ii, 91.
- Wunder, W.** See *Ferdinand Henrich*.
- Wurmser, René**, and (*Mme.*) **J. Duclaux**, photo-synthesis in the alga *Floridæ*, A., i, 211.
- Wurmser, René**. See also *Émile F. Terroine*.
- Wuth, O.**, biological action of proteinogenous amines; a contribution to the question of the acetonitrile reaction, A., i, 835.
- Wuyts, Henri**, optical activation by catalysis of phenylmethylcarbinol, A., i, 506.
- Wuyts, Henri**, and **R. Baillieux**, the preparation of esters by distillation of a mixture of an organic acid and an alcohol, A., i, 494.
- Wyckoff, Ralph W. G.**, determination of the structure of crystals, A., ii, 245.
- application of the theory of space groups to the study of the structure of crystals, A., ii, 245.
- the crystal structure of magnesium oxide, A., ii, 262.
- wave-length of X-rays, A., ii, 674.
- crystal structure of alabandite (MnS), A., ii, 700.
- Y.**
- Yamada, Nobuo**. See *Etichi Yamazaki*.
- Yamaguchi, Yohei**, a method for the determination of the molecular weight requiring but a small quantity of the substance. II, A., i, 83.
- Yamazaki, Etichi**, Nernst's heat theorem and chemical constant, A., ii, 574.
- Yamazaki, Etichi**, and **Nobuo Yamada**, chemistry of diastase. I. Constitution of maltose from the point of view of the chemical dynamics of its hydrolysis, A., i, 647.
- Yanagisawa, Hidekichi**, Japanese bird-lime, A., i, 760.
- Yanagisawa, Hidekichi**, and **Masumi Kamia**, estimation of ethylacetacetate, A., ii, 418.
- Yanagisawa, Hidekichi**, and **Hojime Kondô**, iodine as a catalyst in the preparation of coumarin, A., i, 682.
- Yanek, A.**, coagulation of dispersoid solutions at the interfaces of phases: (method of separation into layers and method of shaking), A., ii, 538.
- Yasui, Toyokichi**, the precipitation of zinc with chromium, A., ii, 216.
- Yeoman, Ernest Wickham**, trithiocarbonates and perthiocarbonates, T., 38.
- Yéramian, Yartkès**, synthesis and dehydration of phenylethylpropylcarbinol [γ -phenylhexan- γ -ol], A., i, 727.
- Yoder, Lester**. See *Arthur Wayland Dox*.
- Yoe, John H.**, anhydrous yellow ferric oxide, A., ii, 337.
- Yoneyama, T.**, and **J. Ban**, methyl chloride, A., i, 3.
- Yoshida, Usaburo**, the regularity in the Stark effect on the spectral lines of hydrogen and helium, A., ii, 129.
- Yoshimura, Kiyohisa**, the nitrogenous compounds in the egg-plant (*Solanum melongena*, L.), A., i, 298.
- Yoshitomi, E.**, and **K. Watanabe**, bromural [α -bromoisovalerylcarbamide], A., i, 775.
- Young, A. M.** See *Tenney L. Davis*.
- Young, I. M. de**. See *G. M. McKellips*.
- Young, John H.** See *Thomas Ewan*.
- Young, Stewart Woodford**, and **Nel Preston Moore**, secondary sulphide ore enrichment; copper sulphides and hydrogen sulphide, A., ii, 126.
- sulphide ore enrichment; formation of chalcopyrite, A., ii, 120.
- Young, William John**, extraction of melanin from skin with dilute alkali, A., i, 467.

Youngburg, Guy E., the removal of ammonia from urine preparatory to the determination of urea, A., ii, 358.
 Youtz, Merril A. See Robert E. Wilson.

Z.

- Zaleski, A., and (Miss) A. A. Sachnovska, estimation of uric acid in blood by Folin's method, A., ii, 226.
 Zambonini, Ferruccio, palmierite from Vesuvius, A., ii, 458.
 Zanetti, Joaquín Enrique, and M. Kandell, formation of anthracene from benzene and ethylene, A., i, 334.
 Zappner, R. See Friedrich Meyer.
 Zawodsky, Othmar. See Robert Kreman.
 Zechmeister, László, and P. Szécsi, an occurrence of fumaric acid and of inositol, A., i, 158.
 Zechstein, H. See Hendrik Zwaardemaker.
 Zehnen, Heinz von, swelling phenomena with fibrous alumina, A., ii, 49.
 Zehnder, Ludwig, the hydrogen atom, atomic ether, and Planck's quantum, A., ii, 191.
 Zeidler, Friedrich. See Alfred Stock.
 Zeisel, S. See Josef Herzog.
 Zeiss, Heinz. See Martin Mayer.
 Zeitschel, Otto. See Arnold Blumann.
 Zellner, Gertrud. See Heinrich Biltz.
 Zellner, Julius, the latex of *Lactarius vellereus*, Fr., A., i, 212.
 chemistry of the higher fungi. XIV. *Lactarius rufus*, Scopol., *L. pallidus*, Pers., and *Polyporus hispidus*, Fr., A., i, 212.
 Zemlén, Géza, synthesis of fatty acid derivatives of the sugars, A., i, 498.
 Zenghellis, Constantin D., detection of nitrogen in organic compounds, A., ii, 557.
 a new reaction of ammonia, A., ii, 558.
 Zenneck, Jonathan, demonstration of the after-glow of active nitrogen by means of an electrodeless ring current, A., ii, 258.
 Zerbin, G. See Riccardo Ciusa.
 Zetzsche, Fritz. See Karl W. Rosenmund.
 Ziegler, K., preparation of anhydrous hydro-ynic acid, A., i, 165.
 the action of unimolecular formaldehyde on Grignard's compounds, A., i, 394.
 Ziegler, K. See also Karl von Auwers.
 Zijp, C. van, sodium salicylate as reagent for the microchemical detection of aluminium, iron, chromium, and manganese, A., ii, 463.
 Zilva, Sylvester Solomon, the action of ozone on vitamin-A in fats, A., i, 475.
 Zilva, Sylvester Solomon, and Masataro Miura, the differential dialysis of the antineuritic and the antiscorbutic factors, A., i, 702.
 Zilva, Sylvester Solomon. See also Arthur Harden.
 Zimmermann, Walther, sensitive test for the hydrides of arsenic, antimony, and phosphorus by means of gold chloride, A., i, 276.
 Zinke, Alois, and Johanna Driml, constituents of resins. VII. Lubanyl benzoate from Siamese beuzoin. I., A., i, 187.
 Zinke, Alois, Alfred Friedrich, and Alexander Rollett, constituents of resins. VI. Amyrins from the elemi resin of Manila: I. Separation of the amyryns, A., i, 39.
 Zinke, Alois. See also Roland Scholl.
 Zinn, John B. See Arthur J. Hopkins.
 Zoller, Harper F., the interaction of tin and phenol, A., i, 238.
 phthalate buffers—some incompatibilities, A., ii, 387.
 viscosity of casein solutions, A., i, 625.
 Zoller, Harper F., and William Mansfield Clark, the production of volatile fatty acids by bacteria of the dysentery group, A., i, 385.
 Zucker, T. F. See L. von Meysenburg.
 Zuckerkandl, Fritz, and Martha Sinai, action of sulphur monochloride on tertiary aromatic amines; constitution of sulphur monochloride, A., i, 901.
 Zuckmayer, F., elimination of silicic acid in the urine after administration of certain silicic acid preparations, A., i, 238.
 Zumbusch, Hermann. See Wilhelm Stepp.
 Zumbstein, R. V. See John Cunningham McLennan.
 Zwaardemaker, Hendrik, and H. Zeehuisen, spray-electricity of solutions of electrolytes, A., ii, 151.
 Zwicknagl, K., electrically heated arsenic reduction tube, A., ii, 412.
 Anonymous, use of "fornitral" for the detection and estimation of nitric acid, A., ii, 558.

INDEX OF SUBJECTS.

TRANSACTIONS AND ABSTRACTS.

1921.

(Marked T., and A., i and A., ii respectively.)

A.

- sorption apparatus. See Gas absorption apparatus.
 urachan. See *Lindera procera*.
 catechin, synthesis of (NIERENSTEIN), T., 164.
 penta-acetyl derivative (FREUDENBERG, BÖHME, and BECKENDORF), A., i, 577.
 enaphthenequinobenzophenoneketazine (GERHARDT), A., i, 747.
 enaphthenequinoxirenoneketazine (GERHARDT), A., i, 747.
 enaphthylene-1:2-azine (SCHÖNBERG and NEDZATI), A., i, 275.
 erin from the maple seed (ANDERSON and KULL), A., i, 821.
 etaldehyde, formation of, from chlorophyll in sunlight (OSTERHOFF), A., i, 263.
 preparation of, from acetylene (CHEMISCHE FABRIK GRIESHEIM-ELEKTRO), A., i, 395; (DEUTSCHE GOLD- & SILBER-SCHNEIDANSTALT VORM. RÖSSLER), A., i, 543; (SOCIÉTÉ ANONYME DE PRODUITS CHIMIQUES), A., i, 706.
 production of, by fermentation of sugars (NEUBERG, NORD, and WOLFF), A., i, 118; (COHEN), A., i, 150.
 detection of, colorimetrically (PITTARELLI), A., ii, 222.
 estimation of, in presence of acetone (STEFF and ENGELHARDT), A., ii, 69.
 cetaldehydebromobenzoylhydrazones (BUNING), A., i, 521.
 cetaldehyde-2:4-dinitro-m-tolylhydrazones (BRADY and BOWMAN), T., 899.
 cetamide, N-bromo-, use of, in bromination (WOLFF and JASCHINOWSKI), A., i, 317.
 Acetanilide, estimation of (RECLAIRE), A., ii, 604.
 Acetanilide, 2-bromo-6-nitro-, and 2-chloro-6-nitro- (FRANZEN and ENGEL), A., i, 714.
 p-bromo-N-nitroso- (BAMBERGER and KÖPCKE), A., i, 134.
 chloronitro-derivatives (HÜFFER), A., i, 550.
 3:1:5-trichloro-2-nitro- (HOLLEMAN and VAN HAEFTEN), A., i, 167.
 Acetanilides, substituted, nitration of (FRANZEN and ENGEL), A., i, 713.
 o- and p-nitro-, separation of (FRANZEN and HEIMERT), A., i, 714.
 nitroso- (BAMBERGER and KÖPCKE), A., i, 134.
 Acetatomercuriformic acid, esters, constitution of (SCHOELLER), A., i, 16.
 Acetatomercuri-β-naphthol (PAOLINI), A., i, 903.
 Acetatomercurivanillin (PAOLINI), A., i, 903.
 Acetethylanilide, chloro- (STOLLE), A., i, 596.
 Acetic acid, manufacture of (PASCAL, DEFFY, EIRO, and GARNIER), A., i, 157.
 synthesis of (ROONEY), A., i, 157.
 dissociation of, in water and salt solutions (SCHREINER), A., ii, 425.
 equilibrium of aniline with (O'CONNOR), T., 400.
 and its derivatives, action of diazonium salts on benzene- and p-toluene-sulphonyl derivatives of (TÖGGER and BERNDT), A., i, 743.
 Acetic acid, lead salt, complex compounds of (WEINLAND), A., i, 535.
 sodium uranyl salts (MIHOLIC), A., i, 219.
 Acetic acid, cellulose ester, preparation of (BARNETT), A., i, 164.
 viscosity of (v. FISCHER), A., i, 848.

- Acetic acid**, cellulose ester, swelling of, in mixtures of nitrobenzene and alcohol (KNOEVENAGEL and BREGENZER), A., i, 771.
 ethylidene ester, preparation of (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 535.
 α -glucose ester (HESS, MESSMER, and KLETZL), A., i, 306.
 methyl ester, hydrolysis of (DHAR, DATTA, and BHATTACHARYA), A., ii, 36.
 rate of hydrolysis of, in presence of sucrose (BURROWS), T., 1798.
 and bromo- and chloro-, halogenacyl esters of (ULICH and ADAMS), A., i, 301.
 phenyl ester, action of sodium on (PERKIN), T., 1284.
Acetic acid, detection of formic acid in (POLINSKI), A., ii, 136.
Acetic acid, chloro-, ethyl ester, condensation of, with magnesium in presence of ethyl acetate (SOMMERLET and HAMET), A., i, 646.
 β -naphthylester (FRIES and FRELLSTEDT), A., i, 431.
 dichloro-, preparation of, from chloral (PUCHER), A., i, 6.
 trichloro-, ammonium salt, removal of copper from silver cathodes by means of (DOUGHTY and FREEMAN), A., ii, 414.
 cyano-, ethyl ester, syntheses by means of (INGOLD), T., 341; (INGOLD and PERREN), T., 1582, 1865.
 condensation of, with ketones (INGOLD), T., 329.
 sodium derivative, condensation of carbon tetrachloride with (INGOLD and POWELL), T., 1229.
 thio-, ethyl ester, decomposition of, by mercury salts (SACHS), A., i, 762.
 α -thiol-, preparation of, and its metallic salts (MYERS), A., i, 843.
Acetic acids, bromo-, catalytic decomposition of (SENDERENS and ABOULENE), A., i, 36.
 chloro-, catalytic decomposition of (SENDERENS), A., i, 157.
 chlorobromo- and dichloro-, preparation of esters of (CROMPTON and TRIFFITT), T., 1574.
Acetoacetic acid, kinetics of the ketonic decomposition of (WIDMARK), A., ii, 183.
 oxidation of (ENGELDT), A., i, 153.
 ethyl ester, preparation of the enolic form of (MEYER and HOPFF), A., i, 391.
Acetoacetic acid, ethyl ester, *p*-carboethoxyphenylhydrazone (THOMS and RITBERT), A., i, 344.
 estimation of (YANAGISAWA), A., ii, 418.
Acetoacetic acid, γ -chloro-, metallic salts and esters of (HAMRI), A., i, 537.
Acetoallylamide, bromo- (BERGMANN, DREYER, and RADT), A., i, 774.
Aceto-*p*-aniside, chloro-, and its derivatives (HALBERKANN), A., i, 562.
Aceto- γ -bromo- β -hydroxypropylamide, bromo- (BERGMANN, DREYER, and RADT), A., i, 774.
Aceto- β -*γ*-dibromo- α -propylamide, bromo- (BERGMANN, DREYER, and RADT), A., i, 774.
Acetobromorhamnose, and its use in synthesis of rhamnosides (FISCHER, BERGMANN, and RABE), A., i, 94.
***m*-Acetotrifluorotoluidide** (SWARTS), A., i, 657.
Acetol. See Acetylcarbinol.
Acetomethylamide, chloro- (STOLLE), A., i, 596.
Acetomethyl-*p*-aniside, chloro- (HALBERKANN), A., i, 562.
Acetone, preparation of, from maize cobs (PETERSON, FRED, and VERHULST), A., i, 856.
 production of, by fermentation (ASBERGER, PETERSON, and FRED), A., i, 80.
 synthesis of (ROONEY), A., i, 157.
 micro-organisms producing (BERTHELOT and OSSART), A., i, 909.
 equilibrium of, with ethyl ether (SCHULZE), A., ii, 338.
 action of ammonia on (PATTERSON and McMILLAN), T., 269.
 behaviour of, with *cis*- and *trans*-1,2-diols (BÖSEKEN and DERX), A., i, 663.
 condensation of formaldehyde with (MÜLLER), A., i, 543.
 compounds of sugars with (KARBER and HURWITZ), A., i, 767.
 formation of, in urine (PITTARELLI), A., i, 206.
 elimination of, in alcaptonuria (KATSCHE), A., i, 338.
 detection of (PITTARELLI), A., ii, 357.
 detection of, in urine (CITROX), A., ii, 284.
 estimation of, iodometrically (HEIMANS), A., ii, 467.
 estimation of, in presence of acetaldehyde (STEPP and ENGELHARDT), A., ii, 69.
Acetone, oximino-, sodium hydrogen sulphite compound (GASTALDI), A., i, 602.

- Acetone substances, prevention of formation of, in the human body (SHAFFER), A., i, 745.
- "Acetoneaceticvalerie" acid. See γ -Keto-octane- $\alpha\beta$ -dicarboxylic acid.
- Acetoneanil, and its derivatives (KNOEVENAGEL and JÄGER), A., i, 786.
- Acetone-*o*-anisidil, and its methiodide (KNOEVENAGEL and JÄGER), A., i, 786.
- Acetonebromobenzoylhydrazones (DUNING), A., i, 521.
- Acetone-3:5-*d*-bromo-*p*-toluoylhydrazone (BUNING), A., i, 521.
- Acetonedicarboxydi-*o*- and -*p*-toluidides (NAIR), T., 1241.
- Acetonedicarboxylic acid, preparation and derivatives of (WILSTÄTTER and PFANNSTIEL), A., i, 92.
- Acetoyldihydrobrucinolone-I (LEUCHS, HELBRIGER, and HEERING), A., i, 884.
- Acetone-2-nitro-4-cyanophenylhydrazones (BORSCHKE), A., i, 460.
- Acetone-*o*-nitrotolylhydrazones (BRADY and BOWMAN), T., 899.
- Acetonephenetids, and their methiodides (KNOEVENAGEL and JÄGER), A., i, 786.
- Acetoneolils, and their derivatives (KNOEVENAGEL and JÄGER), A., i, 786.
- Acetonitrile, inhibition of the toxicity of (WUTH), A., i, 835.
- Aceto-6-nitro-*m*-4-xylylide (PFARMAN), T., 718.
- Acetonilacetatonatodiethylenediamine-cobalt salts (WERNER, SCHWYZER, and KARREN), A., i, 225.
- Acetophenone, *p*-amino-, additive compounds of 2:4:5-trinitrotoluene and (GIVA and ANGELETTI), A., i, 557.
- and its acetyl derivative, condensation of aromatic aldehydes with (GIVA and BAGIELLA), A., i, 730.
- acetyl derivative, salts of (DILTHY, BAURIEDL, GEISSELBRECHT, SREGER, and WINKLER), A., i, 190.
- amino-, thiocyanate (GRANT and PYMAN), T., 1896.
- o*-diamino-, and -*o*-*d*-bromo-*o*-nitro- (GABRIEL and GERHARD), A., i, 441.
- bromo-, velocity of reaction of aniline and (COX), T., 146.
- oximino-, sodium hydrogen sulphite compound (GASTALDI), A., i, 603.
- tophenone-*p*-aminophenylhydrazone, and its derivatives (FRANZEN and STEINFÜHRER), A., i, 468.
- Acetophenoneaminosulphonic acid, cyano-, potassium salt (GASTALDI), A., i, 604.
- Acetophenonebromobenzoylhydrazones (BUNING), A., i, 521.
- Acetophenone-3:5-*d*-bromo-*p*-toluoylhydrazone (BUNING), A., i, 521.
- Acetophenone-2:4-*d*-nitro-5-hydroxyphenylhydrazones (BORSCHKE), A., i, 462.
- Aceto-*o*-toluidide, 4:5-*d*-nitro- (MORGAN and GLOVER), T., 1702.
- Aceto-*m*-toluidide, 2-nitro- (BURTON and KENNER), T., 1052.
- Aceto-*p*-toluidide, 2-chloro-3:5-*d*-nitro- (DAVIES), T., 868.
- α -Acetoxyadipic acid, ethyl ester (INGOLD), T., 968.
- o*-Acetoxybenzoic acid (*acetylsalicylic acid*; *aspirin*), estimation of (OLIVERI-MANDALA and CALDERARO), A., ii, 606.
- α -Acetoxyisobutylranilide (PASSERINI), A., i, 896.
- Acetoxycamphor semicarbazone (BREIT and GOEB), A., i, 257.
- α -Acetoxyennamic acid, ethyl ester (CAULT and WEBER), A., i, 728.
- 4-Acetoxy-3:5-dimethoxyallylbenzene (MAUTNER), A., i, 727.
- Acetoxydimethylindanedione, hydroxy- (FLEISCHER and STEMMER), A., i, 253.
- α -Acetoxy- $\gamma\gamma$ -diphenyl- $\Delta\beta$ -butenoic acid, 8-hydroxy-, lactone (STAUDINGER and REBER), A., i, 247.
- α -Acetoxy- $\alpha\beta$ -diphenylethane, β -nitro- (WIELAND and BLUMICH), A., i, 553.
- 2-Acetoxy-5-ethoxythionaphthen, 4-chloro- (V. AUWERS and THIES), A., i, 121.
- 9-Acetoxyfluorene, preparation of (HENSTOCK), T., 1463.
- α -Acetoxyisobexic acid, ethyl ester (KODAMA), A., i, 220.
- 7-(or 5)-Acetoxy-5-(or 7)-methoxycoumarin (KARFF, RÜDLINGER, GLATTFELDER, and WAITZ), A., i, 800.
- 3-Acetoxy-1-methylbenzoxazole (HENRICH and OFFERMANN), A., i, 887.
- β -Acetoxypropylamine, γ -mono-, and $\alpha\beta$ -*di*-bromo-, hydrobromides and picrates (BERGMANN, DREYER, and RADT), A., i, 774.
- α -Acetoxytetrahydronaphthalene, β -bromo- (V. BRAUN and KIRSCHBAUM), A., i, 408.
- 2-Acetoxythionaphthen (V. AUWERS and THIES), A., i, 120.
- Acetyl chloride, chloro-, preparation of (BARNETT), A., i, 494.

- Acetylacetone** (*pentane-2,4-dione*), preparation of the enolic form of (MEYER and HOPFF), A., i, 391.
- Acetylacetones**, metallic (MORGAN and DREW), T., 1058.
selenium and tellurium (MORGAN and DREW), T., 610.
- Acetylacetone p-nitroanil** (MORGAN and DREW), T., 624.
- N-Acetylanthranilic acid**, N-thiol- (BINZ and HOLZAPFEL), A., i, 31.
- 5-Acetylbarbituric acid**, preparation and derivatives of (BILTZ and WITTEK), A., i, 455.
- Acetylbenzilic acid**, methyl ester (HERZIG and SCHLEIFFER), A., i, 245.
- Acetylcarbinol** (*acetyl*), phytochemical reduction of (FÄRBER, NORD, and NEUBERG), A., i, 150.
- Acetylcellulose**. See Cellulose acetate.
- 6-Acetyl-m-cresol**, 5-bromo-, and its derivatives (v. AUWERS, BORSCHKE, and WELLER), A., i, 572.
- o-Acetyl-p-cresol p-bromophenylhydrazones** (v. AUWERS and LÄMMERHIRT), A., i, 465.
- Acetylcryptobrucinolone**, and its oxidation products (LEUCHS, HELLRIEGEL, and HEERING), A., i, 834.
- Acetyldeoxycholic acid** (WIELAND and BOERSCH), A., i, 179.
- 5-Acetyl-1,3-diethylbarbituric acid**, and its derivatives (BILTZ and WITTEK), A., i, 456.
- Acetyldigitoxigenin** (CLOKITA), A., i, 31.
- 5-Acetyl-1:3-dimethylbarbituric acid**, and its salts and derivatives (BILTZ and WITTEK), A., i, 456.
- 3-Acetyl-2:6-dimethylpyridine-4-carboxylic acid**, and its picrate and ethyl ester (MUMM and BÖHME), A., i, 439.
- Acetyldiphenyl**. See Phenylaceto-phenone.
- 4'-Acetyldiphenylamine**, 2:1-dinitro- (GUA and ANGELETTI), A., i, 556.
- Acetylene**, physical properties of (MAASS and WRIGHT), A., i, 489.
catalytic decomposition of (TIEDE and JENICH), A., ii, 100.
hydrogenation of (ROSS, CULBERTSON, and PARSONS), A., i, 761; (ODA), A., i, 841.
explosion of nitrogen and (GARNER and MATSUNO), T., 1803.
conversion of, into acetaldehyde (CHEMISCHE FABRIK GRIESHEIM-ELKTRON), A., i, 395.
condensation of, with aromatic amines (CONSONNO and CRUTO), A., i, 677.
- Acetylene**, condensation products of ammonia and (CHEMISCHE FABRIK RHENANIA ART.-GES., STUER and GRON), A., i, 852.
condensation of, with benzene and its derivatives in presence of aluminium chloride (COOK and CHAMBERS), A., i, 332.
action of, on calcium ammonium (HACKSPILL and BOTOLFSSEN), A., ii, 549.
action of, on gold haloids (KINDLER), A., i, 396.
action of mercuric chloride with (JENKINS), T., 747.
dibromide. See Ethylene, *αβ-di-bromo-*.
- Acetylenedialdehyde tetraethylacetal**, reactions and derivatives of (WOL and JASCHINOWSKI), A., i, 354.
- 5-Acetyl-1-ethylbarbituric acid**, and its derivatives (BILTZ and WITTEK), A., i, 456.
- 5-Acetyl-o-hydrosulphaminobenzoic acid**. See N-Acetylanthranilic acid, thiol-.
- 1-Acetyl-5-methoxy-2-methylpyrrolidine** (HELPERICH and DOMMEN), A., i, 52.
- 5-Acetyl-1-methylbarbituric acid**, and its derivatives (BILTZ and WITTEK), A., i, 455.
- 5(or 6)-Acetyl-4-methyl-2:2-diethyl-γ-isopropylhydrindene** (FLEISCHER and MELBER), A., i, 252.
- 3-Acetyl-2-methyl-β-naphthachromone**, and its derivatives (SCHNEIDER and KUNAT), A., i, 879.
- Acetyl-N-methylisopapaverine**, and its phenylhydrazones (SCHNEIDER and KOHLER), A., i, 803.
- Acetylmethylparabanic acid** (BEHRND and HÄRTTEL), A., i, 98.
- α-Acetyl-β-methylpropylene oxide** (WEITZ and SCHEFFER), A., i, 569.
- 3-Acetyl-4-methylpyridine**, and its salts (KABE and JANTZEN), A., i, 435.
- Acetylnaphthols**. See Naphthyl methyl ketones, hydroxy-.
- Acetyl-p-nitrophenylhydrazine** (MORGAN and DREW), T., 622.
- β-Acetyl-α-phenylethylene oxide** (WEITZ and SCHEFFER), A., i, 569.
- 4-Acetylphenyl-4':6'-dinitro-α-tolylamine**, and its phenylhydrazones (GUA and ANGELETTI), A., i, 557.
- Acetylphenylurethane**, crystalline (NIJK), A., i, 23.
- 1-γ-Acetyl-α-isopropylbutyric acid**, *αβ-di-ester*, semicarbazone (SIMONSEN), T., 1653.

- Acetylsalicylic acid.** See *o*-Acetoxybenzoic acid.
- Acetylinspic acid**, β -dimethylaminoethyl ester aurichloride (SPÁTH), A., i, 30.
- Acetylinsapoyl chloride** (SPÁTH), A., i, 30.
- Acetylsulphuric acid** (VAN PESKI), A., i, 392.
- Achromatium oxaliferum***, calcium thiosulphate in (HANNEVART), A., i, 643.
- Acid**, $C_6H_{12}O_8$, from oxidation of cyclohexane-1:1-diacetic acid (INGOLD and POWELL), T., 1870.
- $C_{12}H_{22}O_8$, and its glycidic ester, from ethyl *r*-pinate and ethyl chloroacetate (RUZICKA and TREBLER), A., i, 796.
- $C_4H_8O_4N_2$, from methylene dicyanide, acetone and hydrochloric acid (OSTLING), A., i, 321.
- $C_{15}H_{28}O_8N_2$ from chloroaceto-*p*-anisidide (HALBERKANN), A., i, 562.
- $C_{11}H_{16}O_8$, and its derivatives, from 1:2-diphenylindene-3-one oxide and acetic acid (WEITZ and SCHEFFER), A., i, 370.
- $C_{12}H_{16}O_{16}N_2$, and its salts, from oxidation of acetylcyptobrucinolone (LEUCUS, HELLRIEGER, and HEERIG), A., i, 884.
- $C_{12}H_{16}O_8$, from ketocholanic acid and nitric acid (WIELAND and WEYLAND), A., i, 173.
- Acids**, structural formulae of (REMY), A., ii, 501.
- adsorption of, by filter paper (KOLTHOFF), A., ii, 123.
- physiological action of, and their solubility in lipoids (PHILIPSON and HANNEVART), A., i, 531.
- new indicator for detection of (BABB and CABRERA), A., ii, 55.
- identification of, by means of their phenacyl esters (RATHER and REID), A., ii, 356.
- estimation of (KOLTHOFF), A., ii, 55.
- estimation of, volumetrically (TIZARD and BOEREE), T., 132; (BRUNNS), A., ii, 592.
- aliphatic, adsorption of, by charcoal (WIEGNER, MAGASANIE, and VIRTANEN), A., ii, 244.
- volatile, formation of, by bacteria (ZOLLER and CLARK), A., i, 385.
- aromatic, solubility of salts of, and their amines (EPHRAIM), A., i, 508.
- d*-basic, dissociation of acid salts of, in aqueous solution (SABALITSCHKA and SCHRADER), A., ii, 496.
- Acids**, carboxylic, of carbocyclic and heterocyclic compounds, preparation of (ROSENMUND and STRUCK), A., i, 176.
- d*-carboxylic, velocity of hydration of anhydrides of (VERKADE), A., ii, 318.
- salts of, with aniline and its homologues (SABALITSCHKA and DANIEL), A., i, 174.
- polycarboxylic*, ring closure with (PHILIPPI, HANUSCH, and V. WACEK), A., i, 438.
- fatty, surface tensions of salts of, and their mixtures (WALKER), T., 1521.
- with eighteen carbon atoms (NICOLET), A., i, 390.
- lead salts, quantitative separation of (SEIDENBERG), A., i, 705.
- solid, estimation of, in a mixture of fatty acids (TWITCHELL), A., ii, 662.
- of the gluteric series, degradation of (WINDAUS and KLANHART), A., i, 392.
- organic, synthesis of (BAILLON), A., i, 249.
- and their salts, action of light on (JAEGER), T., 2370.
- solubility of, in fatty oils (VERKADE), A., i, 290.
- additive properties of salts of (GARCIA), A., ii, 361.
- polybasic, mobility and size of the anions of (LORENZ and SCHEUERMANN), A., ii, 483.
- sodium salts, conductivity of (LORENZ and SCHEUERMANN), A., ii, 482.
- of the sugar group, constitution and rotatory power of derivatives of (VAN WIER), A., i, 318.
- weak, estimation of, volumetrically (KOLTHOFF), A., ii, 516.
- Acid anhydrides.** See Anhydrides, acid.
- Acid chlorides**, reduction of (ROSENMUND, ZETZSCHE, and HEISE), A., ii, 392.
- thio-, action of aliphatic diazo-compounds with (STAUDINGER, SIEGWART, ANTHES, BOMMER, and GERHARDT), A., i, 43.
- Acid haloïds**, reaction of aldehydes with (ULICH and ADAMS), A., i, 301; (FRENCH and ADAMS), A., i, 342.
- Acidimetry**, use of two indicators in (LIZUS), A., ii, 650.
- Acidosis** (VAN SLYKE), A., i, 828.
- Aconite**, detection of (MALLANER), A., ii, 470.

- Aconitic acid**, chemistry of (VERKADE), A., i, 496.
ethyl ester, preparation of (INGOLD), T., 350.
- Aconitine**, estimation of (DOHME), A., ii, 604.
- Acraldehyde**, and its physico-chemical constants (MOUREU, DUFRAISSE, LEPAPE, ROBIN, POGNET, BOUTARIC, and BOISMENU; MOUREU, BOUTARIC, and DUFRAISSE), A., i, 395.
- Acridine**, and its compounds, pharmacology of (LENZ), A., ii, 755.
- Acrylic acid**, preparation of, and its esters (MOUREU, MURAT, and TAMPIER), A., i, 495, 536.
physico-chemical constants of (MOUREU and BOUTARIC), A., i, 390.
- Actinium**, origin of (ADAMS), A., ii, 8.
decay and transformations of (MEYER), A., ii, 8.
- Actinium-C**, branching relationship and disintegration of (ABRECHT), A., ii, 675.
- Activity coefficients** of strong electrolytes (LEWIS and RANDALL), A., ii, 427.
- Acylbarbituric acids** (BILTZ and WITTEK), A., i, 454.
- Adamsite**. See Diphenylamine arsenious chloride.
- Adipic acids**, α -bromo-, and α -chloro-, ethyl esters (INGOLD), T., 961.
di-bromo-, configuration of (PERKIN and ROBINSON), T., 1392.
di-bromo-, and *di*-odo-, and their ethyl esters (INGOLD), T., 962.
- Adrenaline** (*suprarenine*; *epinephrine*), production of glycaemia by (BORNSTEIN), A., i, 259.
- Adsorption**, stoichiometry of (ODÉN and ANDERSON), A., ii, 438; (ODÉN and LANGELIUS), A., ii, 625.
and heterogeneous catalysis (KRUYT and VAN DUIN), A., ii, 392.
and solubility (GEORGIEVICS), A., ii, 491.
augmented (WIEGNER, MAGASANIK, and VIRTAKAR), A., ii, 244.
by charcoal (BARR and KING), T., 454; (FIRTH), T., 926; A., ii, 382; (DRIVER and FIRTH), T., 1126; (ABDERHALDEN and FODOR), A., ii, 21; (SHELDON), A., ii, 88; (HORST), A., ii, 245; (HARTLEBEN; MOELLER), A., ii, 304; (KOLTHOFF), A., ii, 383.
negative, by wood charcoal (PICKLES), T., 1278.
by coagulation (DEZEINE), A., ii, 88.
by colloids (MUTSCHALLER), A., ii, 26.
- Adsorption of gases** by charcoal and silica (BRIGGS), A., ii, 625.
by metallic catalysts (TAYLOR and BURNS), A., ii, 630.
by powdered metals (v. EULER and HEDELIUS), A., ii, 490.
of water by powdered substances (SCHERINGA), A., ii, 401.
by precipitates (WEISER and MIDDLETON), A., ii, 89; (WEISER), A., ii, 625.
importance of, in analysis (KOLTHOFF), A., ii, 19, 123, 213, 276, 277, 344, 409.
- Adsorption compounds** (HALLER), A., ii, 21.
- Affinity**, chemical (KORVAAR), A., ii, 440.
theory of (REICHSTEIN), A., ii, 388.
residual, and co-ordination (MORGAN and DREW), T., 610, 1058; (MORGAN and SMITH), T., 704, 1066.
- Agglutination**, physical chemistry of (v. SZENT-GYÖRGYI), A., i, 290.
by ricin (GUNN), A., i, 284.
- Air**. See Atmospheric air.
- Alabandite**, crystal structure of (WYCKOFF), A., ii, 700.
- α -Alanine**, preparation of, from methyl-malonic acid (CURTIUS and SIEMER), A., i, 653.
- dl*-Alaninol** (P. and W. KARRER, TAMMANN, HORLACHER, and MADER), A., i, 230.
- α - and β -Albans** from caoutchouc, true constitution of (ULTÉE), A., i, 428.
- Albumin** of the white of hens' eggs (SØRENSEN), A., i, 749.
gold number and sensitising action of (REITSTÖITER), A., ii, 176.
serum, action of electrolytes on (v. SZENT-GYÖRGYI), A., i, 65.
effect of electrolytes and non-electrolytes on the precipitation of (LADÉS), A., i, 820.
detection of, in urine (RENATA), A., ii, 472.
- Albumoses**, detection of, in blood and tissues (ACHARD and FEUILLET), A., i, 380.
detection of, in urine (FITTIPALDI), A., ii, 419.
- Alcaptonuria**, elimination of acetone in (KATSCH), A., i, 388.
- Alcohol**. See Ethyl alcohol.
- Alcohols**, distillation of mixtures of, in steam (REILLY and HICKINBOTTOM), A., ii, 599.

- Alcohols**, catalytic oxidation of (MOUREU and MIGNONAC), A., i, 218; (RIEDEL), A., i, 389; (ROSENMUND and ZETSCHE), A., ii, 393, 631; (BÖESEKEN), A., ii, 500.
- interchange of alkyl groups between fats and (GRÜN, WITTKA, and SCHOLZE), A., i, 222.
- estimation of, in ethereal oils (VAN URK), A., ii, 660.
- estimation of water in (WIRTH), A., ii, 651.
- aliphatic, physical properties and purification of (BRUNEL, CRENSHAW, and TOBIN), A., i, 299.
- higher, preparation of (SCHICHT), A., i, 155.
- polyhydric, determination of the configuration of, by means of their effect on the conductivity of boric acid (BÖESEKEN), A., i, 843.
- unsymmetrical trisubstituted, dehydration of (LÉVY), A., i, 233.
- volatile, estimation of (GRÜN and WIRTH), A., ii, 660.
- Alcoholimetry**, use of miscibility temperatures in (ROSSET), A., ii, 598.
- Alcoholysis** (DASANNACHARYA and SUDBOROUGH), A., i, 667.
- Aldehydes**, chemical constitution and taste of (FURUKAWA), A., i, 637.
- oxidation of (WIELAND), A., i, 390.
- catalytic reduction of (ROSENMUND, ZETSCHE, and HEISE), A., ii, 631.
- reaction of acid haloids with (ULICH and ADAMS), A., i, 301; (FRENCH and ADAMS), A., i, 342.
- condensation of, with aromatic amines (BERG and CAPACCIOLI; BERLINGOZZI), A., i, 107.
- condensation of, with primary arsines (ADAMS and PALMER), A., i, 70.
- action of fluorenone on (DEFAZI), A., i, 568.
- condensation of glycine anhydride with (SASAKI), A., i, 196.
- condensation of methylene dicyanide with (ÖSTLING), A., i, 321.
- phenylhydrazones of, decomposition of (CIUSA), A., i, 749.
- aromatic, condensation of *p*-aminoacetophenone and its acetyl derivative with (GIUA and BAGIELLA), A., i, 720.
- Aldehydoanthraquinone**, condensation derivatives of (JACON), A., i, 794.
- p*-Aldehydobenzylidenefluorene**, 2,7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 782.
- Aldehydophloroglucinol methyl ether** (KARRER, RÜDLINGER, GLATTFELDER, and WAITZ), A., i, 800.
- Alfa**. See Lucerne.
- Alga**, photosynthesis in (WURMSER and DUCLAUX), A., i, 211.
- green, formation of enzymes in (SJOBERG), A., i, 210.
- marine, photosynthesis in (MOORE, WHITLEY, and WEBSTER), A., i, 211.
- Aliphatic compounds**, saturated (GASCARD), A., i, 536.
- Alkali chlorides**, adsorption of, by animal charcoal (HARTLEBEN), A., ii, 304.
- crystallisation of mixtures of alkaline earth chlorides and (LIEBISCH and VORTISCH), A., ii, 862.
- cyanides, use of precipitated iron in the preparation of (HARA), A., i, 548.
- haloids, size of ions and lattice energy of (FAJANS and HERZFELD), A., ii, 174.
- heat of sublimation of (REIS), A., ii, 168.
- vapour pressure of (RUFF and MUGGEN), A., ii, 485.
- molecular volume of (FAJANS and GRIMM), A., ii, 168.
- negative adsorption of, by charcoal from aqueous solutions (PICKLES), T., 1279.
- crystal structure and lattice energy of (SCHWENDENWEIN), A., ii, 310.
- additive compounds of antipyrilaminodiacetic acid and its salts with (FARGHER and KING), T., 202.
- hydrides (EPHEIM and MICHEL), A., ii, 638.
- metals, mass spectra of (ASTON), A., ii, 565.
- conductivity of, in liquid ammonia (KRAUS), A., ii, 370.
- sizes of the kations of (LORENZ), A., ii, 191.
- action of ethers with (DURAND), A., i, 89.
- estimation of, as sulphates (SCHOORL and KOLTHOFF), A., ii, 61.
- ruthenohaloids (GUTHIER, FALCO, and VOGT), A., ii, 457.
- salts, adsorption of, by charcoal (ODÉN and ANDERSSON), A., ii, 438.
- sulphates, compounds of sulphuric acid with (KENDALL and LONDON), A., ii, 45.
- Alkalies**, fusion with (PHILLIPS), A., i, 811.
- mechanism of (LE SEUR and WOOD), T., 1697.
- new indicator for detection of (BAE and CABRERA), A., ii, 55.

- Alkalis**, estimation of (KOLTHOFF), A., ii, 55.
 estimation of, in presence of cyanide and ferrocyanide (MÜHLERT), A., ii, 595.
- Alkalimetry** (KOLTHOFF), A., ii, 465.
 use of two indicators in (LIZIUS), A., ii, 650.
- Alkaline-earth chlorides**, crystallisation of mixtures of alkali chlorides with (LIEBISCH and VORTISCH), A., ii, 262.
 fluorides, spectra of (DATTA), A., ii, 529.
 haloids, additive compounds of anti-pyrylaminiodiacetic acid and its salts with (FARGHER and KING), T., 292.
 metals, magnetic properties of (PASCAL), A., ii, 535.
 compounds of ammonia with (BILTZ and HÜTTIG), A., ii, 202.
 estimation and separation of (TEODOSSIOU), A., ii, 521.
 salts, adsorption of, by charcoal (OPÉN and ANDERSSON), A., ii, 438.
 sulphates, action of ammonium citrate with (TEODOSSIOU), A., i, 540.
- Alkaloids**, salts of, with hexabromostearic acid (COFFEY), T., 1309.
 action of ethyl chloroformate on (GADAMER and KNOCH), A., i, 579.
 reactions of, with phospho- and silicotungstic acids (HEIDUSCHKA and WOLF), A., ii, 469.
 function of, in plants (CLAMICIAN and RAVENNA), A., i, 85.
 separation of ptomaines from (IONESCUT), A., ii, 226.
 angostura. See Angostura.
 cinchona. See Cinchona.
 hygrine. See Hygrine.
 isoquinoline. See isoQuinoline alkaloids.
 strychnos. See Strychnos.
- estimation of, volumetrically (EVERS), A., ii, 527.
 use of methyl red in the estimation of (EBERHART), A., ii, 225.
 estimation of, in cacao (CEMOTTI), A., ii, 470.
 estimation of, in lupines (MACH and LEFERLE), A., ii, 718.
- Alkyl haloids**, action of bromine on, in presence of iron (KRONSTEIN), A., i, 153.
 iodides, photochemistry of solutions of (STROBBE and SCHMITT), A., i, 76.
 nitrates, action of piperidine with (GIBSON and MACBETH), T., 438.
 sulphates, preparation of (LILIENFELD), A., i, 299.
- Alkylamines**, volatile, detection and characterisation of (WOODWARD and ALSBERG), A., ii, 358.
- p-Alkylaminobenzophenones** (MEISENHEIMER, v. BUDKEWICZ, and KANAKOW), A., i, 356.
- Alkylanilines**, preparation of (FONT DE NEMOURS & Co.), A., i, 834.
- Alkylbarbituric acids** (BILTZ and WITTEK), A., i, 454.
- Alkyliminodisulphonic acids**, preparation of (FARBENFABRIKEN VONM. F. BAYER & Co.), A., i, 316.
- Allantoin**, derivatives of (BILTZ and MAX), A., i, 893.
- Allantoxaidin**, transformations of (BILTZ and ROHL), A., i, 891.
- Allophanic acid**, ethyl ester, action of ammonia and amines on (DAINS and WERTHEIM), A., i, 61.
- Allotropy** of organic compounds in contact with solvents (VIXSEDOUSE), A., ii, 179.
- Alloxan**, and its methyl derivative, action of, on carbamides (BILTZ), A., i, 616.
- Alloxanic acid**, derivatives of (BILTZ and MAX), A., i, 617.
- Alloxantins**, halochromism of, and their metallic salts (HANTZSCH), A., i, 619.
- Alloys**, chemical properties of (TARMANN), A., ii, 647.
 estimation of metals in (SCHMIDT), A., ii, 595.
 metallic, electromotive properties of (KREMANNS), A., ii, 10; (KREMANNS and RUDERER), A., ii, 11; KREMANNS and GINACHL-PAMMER, A., ii, 156, 158; (KREMANNS and LOBINGER), A., ii, 157.
 dendritic crystallisation and strength of (VOGEL), A., ii, 38.
- Allyl chloride**, preparation of COULIS and WARD), T., 1305.
 phosphates, action of bromine on (BAILLY), A., i, 493.
- α -Allylacetophenone**, derivatives of (HELPERICH and LECHER), A., i, 420.
- Allyl alcohol**, preparation of (COULIS and WARD), T., 1303.
 decomposition of, at high temperature (PETTRAL), A., i, 156.
 action of heat on, in presence of catalysts (SABATIER and KRUMH), A., i, 645.
- Allylamine**, complex cobalt compounds with (PIERONI), A., i, 315.
 action of halogens on acyl derivative of (BERGMANN, DREYER, and RABO), A., i, 773.

o-Allylcamphorcarboxylic acid, methyl esters (HALLER and RAMART-LUCAS), A., i, 673.

p-N-Allylcarbamidobenzoic acid, ethyl ester (THOMS and RITSERT), A., i, 344.

o-Allyl-*p*-cresol dibromide (v. AUWERS and ANSCHÜTZ), A., i, 638.

Allylene (*methylacetylene*; *propinene*), physical properties of (MAASS and WRIGHT), A., i, 489.

equilibrium of hydrogen bromide with (MAASS and RUSSELL), A., i, 761.

Allyl- β -glucoside, and its derivatives (FISCHER), A., i, 10.

Allylcyclohexanones (CORNUBERT), A., i, 730; ii, 5.

Allylindazoles, and their picrates (v. AUWERS and SCHATZ), A., i, 808.

o-Allyloxyltetrahydronaphthalene, *ac*- β -bromo- (v. BRAUN and KIRSCHBAUM), A., i, 408.

Allylselenocarbamide, and its additive compound with ethyl iodide (SCHMIDT), A., i, 775.

N-Allylthiocarbamidobenzoic acid, ethyl ester (THOMS and RITSERT), A., i, 344.

Alumina. See Aluminium oxide.

Aluminium, atomic weight of (RICHARDS and KREPELKA), A., ii, 48.

arc and spark spectra of (SEELIGER and THAEN), A., ii, 566.

electromotive properties of (SMITS and DE GRUTTER), A., ii, 371; (GÜNTHER-SCHULZE), A., ii, 535.

recrystallisation of, on heating (CARPENTER and ELAM), A., ii, 641.

density of (EDWARDS and MOORMANN), A., ii, 114.

purification and testing of (F. and W. MYLITS), A., ii, 20^c.

and its alloys, effect of cerium on (SCHULTE), A., ii, 454.

metallic, reactions of (HODGES), A., ii, 589.

nickel plating of (MAZUIR), A., ii, 50.

reduction of arsenic trichloride with, in presence of aluminium chloride (RUFF and STAIB), A., ii, 508.

Aluminium alloys (WAENLERT), A., ii, 508.

with copper and zinc (HAUGHTON and BINGHAM), A., ii, 335.

Aluminium compounds in concretions in animal organs (GONNERMANN), A., i, 79.

Aluminium chloride, use of, in the preparation of phenolphthalein (WARD), T., 850.

hydroxide, separation of, from chromium and ferric hydroxides (Mme. M. and M. LEMARCHANDS), A., ii, 351.

CXX. ii.

Aluminium nitrate, hydrates of (INAMURA), A., ii, 114.

potassium nitrate (LAPORTE), A., ii, 699.

oxide (*alumina*), vapour pressure of (RUFF and SCHMIDT), A., ii, 486.

fibrous, swelling of (v. ZEHMEN), A., ii, 49.

silicates, action of salt solutions on (SCHNEIDERHÜHN), A., ii, 114.

Aluminium detection, estimation, and separation:—

detection of, microchemically with sodium salicylate (VAN ZINN), A., ii, 463.

detection of, in plant and animal organs (KEILHOLZ), A., ii, 708.

estimation of, volumetrically (TINGLE), A., ii, 522.

estimation of, and of its oxide, in the commercial metal (CAPPS), A., ii, 657.

estimation of carbon in (SONDAT), A., ii, 654.

separation of, from glucinum (BRITTON), A., ii, 657, 712.

Alums, water of crystallisation and structure of (VEGARD), A., ii, 24.

Amalgams. See Mercury alloys.

Ameisite (SHANNON), A., ii, 459.

Amides, action of sodium hypochlorite on (RINKES), A., i, 27.

acid organic, action of sulphur monochloride on (NAIK), T., 1166.

Amidines, iodo- (BOUGAULT and ROBIN), A., i, 272.

Amines (HILL and DONLEAVY), A., i, 714.

preparation of, from aldehydes or ketones (MIGNONAC), A., i, 165.

equilibria of *m*-aminophenol with (KREMANN and HOGG), A., i, 662.

action of γ -bromovaleric acid on (EMMELT and MEYER), A., i, 268.

equilibria of diphenylmethane with (KREMANN and FRITSCH), A., i, 662.

aliphatic, conductivity and viscosity of solutions in (ELSEY), A., ii, 79.

separation of (FRANZEN and SCHNEIDER), A., ii, 663.

aromatic, optical investigations of the constitution of (LEY and PFEIFFER), A., i, 335.

condensation of acetylene with (CONSONNO and CRUTO), A., i, 679.

action of chloraloxime on (MARTINET and COISSET), A., i, 516.

diazotisation of (BÖSEKEN, BRANDSMA, and SCHOUTTSEN), A., ii, 34.

action of α -sulphopropionic acid on (BACKER), A., i, 855.

- Amines**, proteinogenous, biological action of (WUTH), A., i, 835.
 secondary, catalytic preparation and attempted alkylation of (MALLHE), A., i, 237.
 preparation of formyl derivatives of (MECK), A., i, 591.
 tertiary, conversion of, into secondary nitrosoamines (SCHMIDT and SCHUMACHER), A., i, 660.
- Amino-acids**, viscosities of solutions of (HEDESTRAND), A., i, 546.
 amphoteric properties of (ECKWEILER, NOYES, and FALK), A., i, 316.
 oxidation of, in contact with blood charcoal (WARBURG and NEGELEIN), A., i, 230.
 action of calcium and chromium hydroxides on (HUGONENQ and FLORENCE), A., i, 711.
 degradation of, by bacteria (OTSUKA; HIRAI), A., i, 291.
 value of, in nutrition (SURE), A., i, 526.
 aromatic, action of furfuraldehyde on (FISCHER, BALLING, and ALDINGER), A., i, 22.
 estimation of, in urine (PHILIBERT), A., ii, 605.
- β - and ϵ -Amino-acids**, derivatives of (RUZICKA), A., i, 591.
- Amino-alcohols**, preparation of, from amino-acids (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 228.
 anesthetic properties of (CANO and RANEDO), A., i, 334.
- Amines**, metallic complex (DUFF), T., 385, 1982.
 polyiodides of (EPHRAIM and MOSIMANN), A., ii, 338, 339.
 compounds of, with picric acid and *p*-dichlorobenzenesulphonic acid (EPHRAIM), A., i, 339.
- Ammonia**, dry, preparation of (BRINKLEY), A., ii, 448.
 catalytic synthesis of (CLAUDE), A., ii, 258.
 electronic synthesis of (HIEDEMANN), A., ii, 694.
 vacuum spectrum of (BAILE), A., ii, 262.
 ionisation of, in carbamide solution (BURKE), A., ii, 79.
 viscosity and molecular dimensions of (RANKINE and SMITH), A., ii, 694.
 ad-orption of, by charcoal (FIRTH), T., 926.
 equilibrium of, with ammonium nitrate and thiocyanate (FOOTE and BRINKLEY; FOOTE), A., ii, 441.
- Ammonia**, equilibrium of, with sulphur dioxide and mercuric oxide (RUFF, KÖHNERT, and BRAUN), A., i, 202.
 catalytic oxidation of (DECARRIÈRE), A., ii, 603, 546.
 biochemical oxidation of (BOTT LANGER), A., i, 836.
 action of, on acetone (PATTERSON and McMILLAN), T., 269.
 condensation products of acetylene an (CHEMISCHE FABRIK RHEINLANI AKT.-GES., STEUER, and GROB), A., i, 852.
 compounds of, with barium, calcium and strontium (BILTZ and HITTE), A., ii, 201.
 transformation of, into carbamid (MATHONON and FÉRAQUES), A., ii, 33.
 action of chlorine with (NOYES and HAW; NOYES), A., ii, 42.
 and its derivatives, action of ozone on (STRECKER and THIESENMAN), A., ii, 44.
 action of, on silver bromide sol (AVERBACH), A., ii, 312.
 compounds of silver haloids with (BILTZ and STOLLENWERK), A., ii, 201.
 detection of (ZENGEHEIS), A., ii, 358.
 detection of, microchemically (KOLL and TEODOSSIC), A., ii, 214.
 estimation of, in urine (PHILIBERT), A., ii, 605.
- Ammoniates**, equilibrium of (FRIEDRICH), A., ii, 503.
- Ammonium alloys** with mercury, decomposition of (ARONHEIM), A., ii, 296.
- Ammonium salts**, ultra-red reflection spectra of (REINKORER), A., ii, 144.
 estimation of, with formaldehyde (KOLTHOFF), A., ii, 711.
 estimation of, in soils (AARHENS), A., ii, 412.
- Ammonium carbonate**, equilibrium of the reaction of calcium sulphate with (NEUMANN and GELLENBERG), A., ii, 587.
 carbonates, equilibrium of formation of (TERRES and WEISER), A., ii, 448.
tri- and *per*-thiocarbonates (YEOHAN), T., 51.
 chloride, equilibrium of manganese chloride, water and (CLENSMANS and RIVETT), T., 1329.
 equilibrium of sodium nitrate, water and (RENGADE), A., ii, 93.
 fluoride, toxicity of, towards yeast (FÜLLMER), A., i, 910.

- Ammonium haloids**, ultra-red absorption spectra of, in thin layers (REINKÖNER), A., ii, 618.
 crystal structure of (BARTLETT and LANGMUIR), A., ii, 261.
 hydroxide, equilibrium of the reaction of calcium sulphate with (NEUMANN and KOTYGA), A., ii, 587.
 molybdates (POSTERNAK), A., ii, 51, 117, 118.
 nitrate, equilibrium of, with ammonia and ammonium thiocyanate (FOOTE and BRINKLEY), A., ii, 441.
 potassium nitrate, action of, on soils (KEMPF), A., i, 915.
 selenodithionate (MORGAN and SMITH), T., 1068.
 sulphate, melting point of (KENDALL and DAVIDSON), A., ii, 334.
 melting and boiling points and equilibria of (JANECKE), A., ii, 697.
 effect of, on plants (JONES and SHIVE), A., i, 838.
 magnesium sulphate, diffusion of solutions of (PORLEZZA), A., ii, 170.
 iron alum, colour of (BONNELL and PERMAN), T., 1994.
 sulphide, conversion of, into sulphate (GLAUD), A., ii, 697.
- Ammonium organic compounds** : —
 Diammonium cyanide (MÜLLER and HERDEGEN), A., i, 742.
 Ammonium radicle, the free (WEITZ, ROTH, and NELKEN; WEITZ, NELKEN, and LUDWIG), A., i, 804.
- Amniotic fluid**, chemical analyses of (CLOCNE and REGLADE), A., i, 754.
- Amoeba**, action of immune sera on (v. SCHUCKMANN), A., i, 204.
Amoeba jamaicensis, oil from leaves of (ROBERTS), A., i, 515.
- Amygdalase**, ageing of (BERTRAND and COMPTON), A., i, 469.
- Amygdalinase**, ageing of (BERTRAND and COMPTON), A., i, 469.
- α*-Amyl** nitrate, nitro- (WIELAND and RAHN), A., i, 783.
- Amyl alcohol**, fermentation, catalytic dehydration of (SENDERENS), A., i, 4.
- Amylase**, mechanism of the action of, and its estimation (AMBAR), A., i, 368.
 poisoning of (OLSSON), A., i, 522.
 pancreatic, action of amines on (DESOREZ and MOOG), A., i, 282.
 of eye (BAKER and HULTON), T., 805.
 estimation of the activity of (v. EULER and STANBERG), A., ii, 528.
- Amylbenzene**, and its sulphonic acid derivatives and *p*-nitro- (RADCLIFFE and SIMPKIN), A., i, 502.
- iso*-Amylindazoles**, and their picrates (v. ACWERS and SCHAICH), A., i, 808.
- 2-*iso*-Amylnaphthylamine**, 1-nitroso- (FISCHER, DIEHLICH, and WEISS), A., i, 58.
- Amylopectin**, synthesis of (SAMEC and MAYER), A., i, 649.
 carbohydrate from (SAMEC and MAYER), A., i, 397.
- Amylophosphoric acid**, calcium salt (SAMEC and MAYER), A., i, 649.
- Amylose**, action of salts on (BIEDERMANN), A., i, 11.
- Amyloses** (KÄRBER, NÄGELI, HURWITZ, and WALTI), A., i, 768.
- N*-(*α*-*iso*-Amyloxyethyl)-*m*-nitroaniline**, *N*-*β*-trichloro- (WHEELER and SMITH), A., i, 411.
- α*-Amyloxytetrahydronaphthalene**, *ac*-*β*-bromo- (v. BRAUN and KIRSCHBAUM), A., i, 408.
- n*-Amylphenol**, and its derivatives (RADCLIFFE and SIMPKIN), A., i, 502.
- 2-*iso*-Amylthiophen** (STEINKOPF and SCHUBERT), A., i, 579.
- 2-*iso*-Amylthiophen-5-mercuri-salts** (STEINKOPF), A., i, 632.
- α*- and *β*-Amyrins** from elemi resin, and their bromo-derivatives (ZINKE, FRIEDRICH, and ROLLETT), A., i, 59.
- Anæsthesin**. See Benzoic acid, *p*-amino-, ethyl ester.
- Anæsthetics**, local (LAUNOY and FUMORI), A., i, 79; (FOURNEAU), A., i, 548.
- Analysis**, importance of adsorption in (KOLTHOFF), A., ii, 19, 123, 218, 276, 277, 341, 409.
 use of membrane filters in (JANDER and STUHLMANN), A., ii, 711.
 combustion, of organic compounds (READ), A., ii, 348.
 steel bomb for (ROTH, MACHELEIDT, and WILMS), A., ii, 709.
 electrolytic (BOTTGER), A., ii, 65;
 (LASSIER), A., ii, 651.
 electro-volumetric (KOLTHOFF), A., ii, 121.
- 1 γ** flame reactions (MEUNIER), A., ii, 351.
- gravimetric** (WINKLER), A., ii, 57, 62, 521, 559, 656.
- microchemical**, with reagents sensitised by saturation (LUDWIG; LUDWIG and BUTESCU), A., ii, 271.
 quantitative, weighing of precipitates in (GARTNER), A., ii, 123.
- micro-combustion**, furnace for (DAURWITZ), A., ii, 131.
- organic**, gas combustion furnace for (HEDLEY), T., 1242.

- Analysis**, physico-chemical volumetric (DUBRISAY), A., ii, 344.
 piezometric. See Piezometric analysis.
 qualitative, ring formation in (REISS), A., ii, 124.
 spot reactions in (FEIGL and STERN), A., ii, 278; (HAUSER), A., ii, 344.
 of metallic ions (HALL), A., ii, 651.
 of metals of the ammonium sulphide group (SABALITSCHKA), A., ii, 278.
 volumetric, of acids and bases (TIZARD and BOEREE), T., 132.
 influence of temperature on the strength of standard solutions in (OSAKA), A., ii, 124.
 use of amalgams in (NAKAZONO), A., ii, 596, 714.
- Andropogon Jecurancusa*, essential oil from (SIMONSEN), T., 1641.
- Anemonin**, derivatives of (ASAHINA and FUJITA), A., i, 793.
- Angle of slope**, of particles (LANGHANS), A., ii, 39.
- Angostura alkaloids** (TROEGER and BONICK), A., i, 121.
- Anhydrides**, higher aliphatic acid, preparation of (HOLDE and TACKE), A., i, 842.
- Anhydrite**, reduction of (RIESENFELD, FELD, and HESSE), A., ii, 41.
- Anhydrocheloninecarboxylic acid**, ethyl ester (GADAMER and KNOCH), A., i, 581.
- Anhydro- α -hydroxybenzylphosphinic acid**, and its barium salt (COXANT and MACDONALD), A., i, 70.
- Anhydro-sugars**, preparation of (KARRER and SMIRNOV), A., i, 766.
 compounds of, with alkali hydroxides (KARRER), A., i, 765.
- Anhydrotriphenylphosphineoxybromide** (STEINKOPF and BUCHHEIM), A., i, 470.
- Aniline**, equilibrium of acetic acid with (O'CONNOR), T., 400.
 velocity of reaction of ω -bromoacetophenone and (*U*ox), T., 145.
 compounds of, with lead salts (MANDAL), A., i, 410.
 and its homologues, salts of dicarboxylic acids with (SABALITSCHKA and DANIEL), A., i, 174.
 and its homologues, ethylation of (MAILHE and DE GODON), A., i, 594.
 and its derivatives, action of furfuraldehyde on (FISCHER, BALLING, and ALDINGER), A., i, 22.
 hydrobromide and hydrochloride, complex (MANDAL), A., i, 106.
- Aniline**, reaction of phenyl iododichloride with (PIERONI), A., i, 338.
 estimation of (SABALITSCHKA and SCHRADER), A., ii, 224.
 estimation of, volumetrically (SABALITSCHKA and SCHRADER), A., ii, 463.
- Aniline**, 5-bromo-2:4-dinitro- (GIVA), A., i, 551.
 dibromo-, and *p*-chloro-*m*-bromo- and its acetyl derivative (BAMBERGER), A., i, 725.
 2-chloro-6-nitro- (FRANZEN and ENGEL), A., i, 714.
 2:5-dichloro-3-nitro- (HOLLEMAN and VAN HAEFTEN), A., i, 167.
tetranitro-, properties of (FLERSCHEIM), A., i, 504.
- Anilines**, *p*-substituted, transformation of toluenesulphonyl derivatives of (HALBERKANN), A., i, 779.
 chloro- and nitro- and their acetyl derivatives, solubility and volatility of (SIDGWICK and RUIE), T., 1013.
trichloro-, and chloronitro- (HÜFFER), A., i, 550.
 nitro-, solubility of, in *m*-xylene (CHAPAS), A., i, 235.
- Aniline colouring matters**, production of acetaldehyde from, in presence of sunlight (OSTERHOUT), A., i, 293.
- Aniline-*p* sulphonic acid** (*sulphanilic acid*), *p*-toluidine salt (VAN DUIN), A., ii, 221.
- 1-Anilinoacetylacetone**, 1-*p*-nitro- (MORGAN and DREW), T., 623.
- β -Anilinoacetylcitramalic acid** (PASERINI), A., i, 896.
- β -Anilinoacitraconic acid** (PASERINI), A., i, 896.
- Anilino-4:5-dimethoxyphthalonic acid**, aniline salt (FARGHER and PERKIN), T., 1738.
- 1-Anilino-2:6-diphenyl-4-methylpyridinium iodide** (SCHNEIDER and SEEBACH), A., i, 578.
- Anilino-ethoxyacetylacetone**, *p*-nitro- (MORGAN and DREW), T., 623.
- 4-Anilino-7-hydroxycoumarin** (BAYER and SCHODER), A., i, 353.
- β -Anilinomesaconic acid** (PASERINI), A., i, 896.
- Anilinoethylene-1-epicamphor** (PERKIN and TITLEY), T., 1092.
- Anilino-*m*-opianic acid**, and its derivatives (FARGHER and PERKIN), T., 1739.
- Anilinopyridine sodium** (ENMERT and BECHERT), A., i, 269.
- 1-Anilino-2:4:6-triphenylpyridinium iodide** (SCHNEIDER and SEEBACH), A., i, 578.

- 3-Anilinoxanthone, and its 2-carboxylic acid (ECKERT and SEIDEL), A., i, 864.
- Animal oils, marine. See under Oils.
- Animals, zinc content of (BERTRAND and VLADESCO), A., i, 382.
- marine, occurrence of zinc in (BODANSKY), A., i, 78.
- Animal tissues, bromine and chlorine in (DAMIENS), A., i, 77, 476; (PILLAT), A., i, 78.
- fixation of calcium by (FREUDENBERG and GYÖRGY), A., i, 382.
- Anisaldehydenitrocyanoophenylhydrazones (BOESCHE), A., i, 460.
- Anisaldehyde-6-nitro-4-cyano-*m*-tolylhydrazones (BOESCHE), A., i, 461.
- Aniseldoxime, oxidation of (ROBIN), A., i, 113.
- p*-Anisidinediacetic acid, and its derivatives (HALBERKANN), A., i, 562.
- p*-Anisidinoacetomethyl-*p*-anisidide (HALBERKANN), A., i, 562.
- Anisole (phenyl methyl ether), chloronitro-derivatives (HÜFFER), A., i, 550.
- 4-*o*-chloro-2-nitro-, and 2:3:6-*tri*-chloro- (HOLLEMAN and VAN HAEFTEN), A., i, 187.
- trichloro-derivatives (HOLLEMAN, VAN DER HOEVEN, and VAN HAEFTEN), A., i, 102.
- s*-trinitro-, compound of piperidine and (GIUA, MARCELLINO, and CURTI), A., i, 194.
- additive compounds of, with pyridine and quinoline (GIUA and GIUA), A., i, 593.
- Anisotropy of dianisylidenecyclohexanone (MÜLLER), A., i, 674.
- p*-Anisylaminoaceto-*p*-anisidide (HALBERKANN), A., i, 562.
- Anisyldeoxybenzoin, and its oxime (OREKHOFF and TIEFFENAU), A., i, 586.
- o*-Anisylethylamine. See *o*-*p*-Methoxyphenylethylamine.
- 9-*p*-Anisylfluorene, 2:7:9-*tri*-chloro- (STIEGLITZ and SCHATZKES), A., i, 782.
- p*-Anisylfurylamphorylmethane (WOLFF), A., i, 514.
- p*-Anisylglycine, and its salts and derivatives (HALBERKANN), A., i, 562.
- Anisylidene-*p*-acetylaminoacetophenone (GIUA and BAGIELLA), A., i, 731.
- p*-Anisylideneaminacetophenone (GIUA and BAGIELLA), A., i, 730.
- Anisylidenebisphenylacetamide (GUPTA), T., 301.
- 9-*p*-Anisylideneffluorene, 2:7-*di*-chloro- (STIEGLITZ and SCHATZKES), A., i, 782.
- Anisylidenemethylenedioxybenzobutere-none (BOESCHE and ROTH), A., i, 166.
- Anisylidenetetrahydroanemonie acid (ANAHINA and FUJITA), A., i, 799.
- o*-Anisyl-8-naphthacinchonic acid, esters (CIUSA and ZERBINI), A., i, 195.
- p*-Anisyl propyl ketone, semicarbazide-semicarbazone (V. AUWERS), A., i, 466.
- o*-Anisyltetrahydro-8-naphthacinchonic acid, sodium salt and methyl ester (CIUSA and ZERBINI), A., i, 195.
- Annual General Meeting, T., 513.
- Anode rays. See Rays.
- Anodes, copper, potential of, in alkali solution (JIRSA), A., ii, 298.
- Antagonism of ions (KOCHMANN, LICHTANS, and MUTHAUF), A., i, 147; (NEUSCHLOSS), A., i, 148.
- Anthocyanidins (EVEREST and HALL), A., i, 485.
- Anthocyanins (EVEREST and HALL), A., i, 485.
- formation of, in plant organs (KOHLEK), A., i, 484.
- physiological rôle of (JONESCO), A., i, 618.
- Anthophyllite from Moravia (SCHIRMSEIN), A., ii, 122.
- analysis of (SHANNON), A., ii, 458.
- Anthracene, formation of, from benzene and ethylene (ZANETTI and KANDELL), A., i, 334.
- preparation of nitrogenous derivatives of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 361.
- synthesis of, from naphthalene (COLVER and NOYES), A., i, 409.
- Anthracene oils, constituents of (PASCAL), A., ii, 574.
- Anthracene series, studies in the (BARNETT and COOK), T., 901.
- Anthranilic acid, methyl ester, detection of, in fruit juices (POWER), A., ii, 357.
- Anthranilic acid, 5-nitroso-, and its salts and derivatives (HOUBEN and SCHREIBER), A., i, 109.
- Anthranilomethylenephoxyllic acid, sodium salt (BINZ and HOLZAPFEL), A., i, 30.
- Anthranilpyridinium salts (BARNETT and COOK), T., 907.
- Anthraquinone, and its derivatives, catalytic reducing action of (SUNDER and BADEN), A., i, 676.
- benzyl derivatives, reduction of (SCHOLL), A., i, 872.
- sulphonation of, in presence of mercury (ROUX and MARTINET), A., i, 257.
- Anthraquinone, α -amino-, preparation of (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 871.
- α -amino-derivatives (BATTEGAY and CLAUDIN), A., i, 513.

- Anthraquinone**, amino- and nitro-amino-derivatives (TERRES), A., i, 676.
- 1:2:5:6-*tetra*-amino- (FARBEN-FABRIKEN VORM. F. BAYER & Co.), A., i, 747.
- di*bromo-derivatives (BATTEGAY and CLAUDIN), A., i, 349.
- 2:3-*di*bromo-, for synthesis of alizarin (GRANDMOUGIN), A., i, 871.
- octa*chloro- (ECKERT), A., i, 870.
- 1:3-*dichloro*-2-hydroxy-, and 1:3:4-*trichloro*-2-hydroxy- (FRIES and HARTMANN), A., i, 256.
- chlorodinitro-, *dichloronitro*-, and *dinitrohydroxy*- (ULLMANN), A., i, 424.
- dinitro*-derivatives (BATTEGAY and CLAUDIN), A., i, 350.
- Anthraquinone series**, preparation of compounds of the (ATAK and CLOUGH), A., i, 870.
- preparation of nitrogenous condensation products of (BADISCHER ANILIN- & SODA-FABRIK), A., i, 274, 350.
- a*-Anthraquinoneazooxoacetic acids**, and their derivatives (GATTERMANN and ROLFES), A., i, 819.
- p*-Anthraquinoneazoanilines** (GATTERMANN and ROLFES), A., i, 818.
- p*-Anthraquinoneazodimethylanilines** (GATTERMANN and ROLFES), A., i, 818.
- 1-Anthraquinoneazohydroxylamide**, 4-chloro- and 4-nitro- (GATTERMANN and ROLFES), A., i, 818.
- p*-1:5-Anthraquinoneazohydroxylamide-azodimethylaniline** (GATTERMANN and ROLFES), A., i, 818.
- 1-Anthraquinoneazohydroxylamide-5-diazonium sulphate** (GATTERMANN and ROLFES), A., i, 818.
- Anthraquinoneazo- β -naphthols** (GATTERMANN and ROLFES), A., i, 819.
- 4:2-Anthraquinoneazo- α -naphthylamine** (GATTERMANN and ROLFES), A., i, 819.
- p*-Anthraquinoneazophenols** (GATTERMANN and ROLFES), A., i, 818.
- Anthraquinoneazo-1-phenyl-3-methylpyrazolones** (GATTERMANN and ROLFES), A., i, 819.
- p*-1-Anthraquinoneazoresorcinol** (GATTERMANN and ROLFES), A., i, 818.
- m*-Anthraquinoneazo-*p*-toluidines** (GATTERMANN and ROLFES), A., i, 818.
- pp*-1:5-Anthraquinonebisazoaniline** (GATTERMANN and ROLFES), A., i, 819.
- mm*-1:5-Anthraquinonebisazo-*p*-toluidine** (GATTERMANN and ROLFES), A., i, 819.
- Anthraquinone-2-carboxylic acid**, 5:8-*di*- and 5:6:7:8-*tetra*-chloro- (ECKERT and ENDLER), A., i, 871.
- 1:4-Anthraquinonequinonediazide** (GATTERMANN and ROLFES), A., i, 818.
- ω -(1:5-Anthraquinonyldi-imino)dibenzaldehyde** (MAYER and BANSKA), A., i, 176.
- 1:8-Anthraquinonyl-5-methyltriazole-4-carboxylic acid**, ethyl ester (GATTERMANN and ROLFES), A., i, 818.
- Anthrone**, preparation of (BARNETT and COOK), T., 906.
- Antibodies** (HUNTOON, MASUCCI, and HANNUM), A., i, 144.
- Antiketogenesis** (SHAFER), A., i, 754.
- Antimony**, atomic weight of (WILLARD and McALPINE), A., ii, 405.
- specific heat of, at low temperatures (GÜNTHER), A., ii, 16.
- crystalline structure of (OGG), A., ii, 513.
- equilibrium of copper, sulphur, and (GUERTLER and MEISSNER), A., ii, 589.
- Antimony alloys** with cadmium, electromotive properties of (KREMAN and GMACHL-PAMMER), A., ii, 156.
- thermo-electric properties of (FISCHER and PFLEIDERER), A., ii, 296.
- with copper and tin, electro-analysis of (FOERSTER and AANENSEN), A., ii, 350.
- with selenium, electromotive force of (KREMAN and WITTEK), A., ii, 342.
- with sodium, electromotive properties of (KREMAN and PRESZFEREND), A., ii, 332.
- with thallium, electromotive properties of (KREMAN and LOBINGER), A., ii, 157.
- Antimony compounds**, toxicity of, towards plants (WOBER), A., i, 213.
- Antimony triiodide**, action of, with phenyldimethylarsine (BUBBINS and TURNER), T., 1449.
- trisulphide*, equilibrium of, with lithium sulphide (TAKAHASHI), A., ii, 208.
- equilibrium of, with lead sulphide (ITSUKA), A., ii, 206.
- equilibrium of, with silver sulphide (KONNO), A., ii, 206.
- pentasulphide* (sulphur auriferous) (KIRCHHOFF), A., ii, 206.
- sulphides, analysis of (VAN ROSEN and DEKKER), A., ii, 416.
- alkali thiosulphates (V. SZILAGYI), A., ii, 207.

- Antimony detection, estimation, and separation**—
 detection of (ZIMMERMANN), A., ii, 276.
 detection of, in presence of tin (NJEBOVAN), A., ii, 562.
 estimation of, and its separation from arsenic and tin (HAHN and PHILIPPI), A., ii, 524.
 estimation of, and its separation from tin in presence of phosphoric acid (MOCRET and BARLOT), A., ii, 597.
 separation of, from tin (LUFF), A., ii, 353.
- Antipyrine** (1-phenyl-2,3-dimethyl-5-pyrazolone), compounds of mercury haloids with (OLIVIER-MANDALÀ), A., i, 378.
- Antiprylaminoacetic acid** and its salts, and their additive compounds with neutral salts, and its ethyl ester (FARGHER and KING), T., 292.
- Antithrombin** (DOYON), A., i, 699.
- Apples**, gases in intercellular spaces of (MAGNESS), A., i, 759.
 odorous constituents of (KODAMA), A., i, 220.
- l-Arabonic acid**, amides of (VAN WIJK), A., i, 319.
- l-Arabonylaminoacetic acid**, ethyl and methyl esters (VAN WIJK), A., i, 319.
- Aragonite**, equilibrium of calcite with, in aqueous solution (BÄCKSTRÖM), A., ii, 317.
- Arginase**, action of (GROSS), A., i, 522.
- Arginine**, formation of creatine from (GROSS and STEENBOCK), A., i, 700.
- Argon**, light diffused by (RAYLEIGH), A., ii, 6.
- Aristochin nitrate**, preparation of (VAN ITAILIE and LE COULTRE; VAN DER VREN), A., i, 45.
- Aristol** (WOOLLETT), A., i, 340.
- Armangite** from Sweden (AMINGOFF and MAUZELIUS), A., ii, 269.
- Aromatic compounds**, polynuclear, spectrochemistry of (v. AUWERS and FRÜHLING), A., ii, 230.
 transformations of (BAMBERGER), A., i, 716.
 catalytic hydrogenation of, by means of platinum (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 667; ii, 185.
 nitration of (WIELAND, REISENBERGER, BERNHEIM and BÖHM), A., i, 778.
 catalytic nitration of, by means of mercuric nitrate (DAVIS, WERRALL, DRAKE, HELMKAMP, and YOUNG), A., i, 338.
- Arsanilemethylenesulphoxylic acid**, sodium magnesium salt (BINZ and HOLZAPFEL), A., i, 31.
- Arsanthrene** and its derivatives (KALE), A., i, 375.
- Arsanthrene**, amino-, dichloride hydrochloride (WIELAND and RHEINHEIMER), A., i, 374.
- Arsanthrenic acid**, and amino- (WIELAND and RHEINHEIMER), A., i, 374.
- Arsenic**, distribution of, in soils and animal and vegetable matter (LILLIG), A., i, 216.
 colloidal, pharmacological action of (KÜLZ), A., i, 289.
- Arsenic compounds**, toxicity of, towards plants (WÖREN), A., i, 213.
- Arsenic trichloride**, reduction of, by aluminium, in presence of aluminium chloride (RUFF and STAIR), A., ii, 508.
- trihydride (arsine)**, preparation and estimation of (THOMS and HESS), A., ii, 110.
 viscosity and molecular dimensions of (RANKINE and SMITH), A., ii, 694.
- triiodide**, action of, with phenyldimethylarsine (BURNOWS and TURNER), T., 1449.
- Arsenious acid**, effect of mercuric nitrate on the oxidation of, by nitric acid (KLEMENC and POLAK), A., ii, 442.
 reduction of permanganate by (GELOSIO), A., ii, 115.
 compounds of thiocyanates with (EPHRAIM), A., i, 15.
- Arsenic compounds**, estimation of, volumetrically (METRICE), A., ii, 347.
- Arsenites**, detection and separation of, from arsenates (SEARS), A., ii, 347.
- Arsenic acid**, estimation of, iodometrically (KOLTHOFF), A., ii, 463.
 estimation of, volumetrically, and its salts (MORRIS; CORFIELD and WOODWARD), A., ii, 519.
 estimation of, in presence of salts (DÉBOURDEAUX), A., ii, 180.
- Arsenates**, colloidal (KLEMP and v. GULAY), A., ii, 507.
 detection and separation of, from arsenites (SEARS), A., ii, 347.
- Arsenic trisulphide**, ph. t. sensitiveness of sols of (FREUNDLICH and NATHANSON), A., ii, 494.
 colloidal flocculation of (BOUÏARIC and VILLAUME), A., ii, 449, 537.
 coagulation of, by cobaltammines (MATSUNO), A., ii, 637.

- Arsenic organic compounds** (BURROWS and TURNER), T., 1448; (MATSUMIYA; ADAMS and PALMER; CHRISTIANSEN), A., i, 70; (WIELAND and RHEINHEIMER), A., i, 371; (STEINKOPF and MÜLLER), A., i, 404; (LEWIS, LOWRY, and BERGEM; STEINKOPF and WOLFRAM), A., i, 471; (STEINKOPF and SCHWEN), A., i, 694; (LIEB), A., i, 696.
optically active, preparation of (BURROWS and TURNER), T., 426.
of the pyrazone series (FARBERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 752.
- Arsenic detection, estimation, and separation** :—
detection of (WINKLER), A., ii, 275; (ZIMMERMANN), A., ii, 276.
electrically-heated reduction tube for use in the detection of (ZWICKNAGL), A., ii, 412.
detection of, in plant and animal organs (KEILHOLZ), A., ii, 708.
detection and estimation of (KOHNE-ABHES), A., ii, 130.
estimation of (CRIBIER), A., ii, 653.
estimation of, electric oven for use in (BIRCKENBACH), A., ii, 215.
double tubes for estimation of (LOCKEMANN), A., ii, 591.
estimation of, in organic compounds (ROBERTSON), A., ii, 275.
estimation of, in physiological fluids (ENGELSON), A., ii, 59.
estimation of, in salvarsan (KIRCHER and v. RIEPERT), A., ii, 130.
estimation of, in soils (REICHERT and TRELLES), A., ii, 519.
estimation of, colorimetrically, in urine and blood (SCHEFFLER), A., ii, 215.
estimation of, and its separation from antimony and tin (HAHN and PHILIPP), A., ii, 524.
- Arsenobenzene**, 3:3'-diamino-4:4'-di-hydroxy-, dihydrochloride. See Salvarsan.
di- and *para*-aminodihydroxy-, acetyl derivatives (RAIZINS and GAVRON), A., i, 370.
1-*p*-Arsenodiphenyl-di(4-amino-2:3-dimethyl-5-pyrazolone), and its derivatives (FARBERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 752.
- Arsines**, primary, condensation of, with aldehydes (ADAMS and PALMER), A., i, 70.
tertiary aromatic, action of sulphur monochloride on (ZICKERKANDL and STENAI), A., i, 901.
- Arsinic acids**, preparation of (ROSENMUND), A., i, 370.
electrical conductivity of (FICHTER), A., i, 628.
- Arsphenamine**. See Salvarsan.
- Artemisia annua***, constituents of the oil from (ASAHINA and TAKAGI), A., i, 9.
Artemisia brevifolia, cationin in the leaves of (GREENISH and PRAESON), A., i, 211.
- Artemisia ketones***, and their derivatives (ASAHINA and TAKAGI), A., i, 9.
- Arylamines**, additive compounds of nitro-derivatives of naphthalene with (SUDBOUGH, PICTON, and KARVE), A., i, 557.
- Arylamino-ceramidonines** (BADISCHE ANILIN- & SODA-FABRIK), A., i, 362.
- Arylazides**, chemistry of (BAMBERGER), A., i, 716.
- Arylazoglyoxalene-carboxylic acids** (FARGHER), T., 158.
- Aryhydroxylamines**, chemistry of (BAMBERGER), A., i, 716, 723.
- Asbestos**, adsorption by (KOLTHOFF), A., ii, 341.
- Aspergillus niger* (*Sterigmatocystis nigrum*)**, effect of salts on the growth of (HAENSELER), A., i, 836.
utilisation of dextrose in the growth (TERROINE and WURNER), A., i, 837.
effect of iron and zinc salts on the growth of (STEINBERG), A., i, 432.
utilisation of nitrogen and of phosphorus by (VORBRUDT), A., i, 792.
effect of sodium chloride on the development of (MOLLIARD), A., i, 451.
- Aspirin**. See *o*-Acetoxybenzoic acid.
- Assimilation**, plant. See Plants.
- Asymmetric compounds**, resolution of (SHIMOMURA and COHEN), T., 1516.
- Atmospheric air**, ratio of the specific heats of carbon dioxide and (PARRINGTON), A., ii, 621.
density of (BAXTER; JAQUEROD and BOREL), A., ii, 635.
purification of, from toxic gases (DENGREZ, GUILLEMAUD, and SAYES), A., ii, 107.
ignition of mixtures of methane and (MORGAN and WHEELER), T., 211.
propagation of flame in mixtures of ethylene and (CHAPMAN), T., 1677.
explosion of inflammable mixtures of coal gas and (DAVID), A., ii, 83.
explosion of mixtures of hydrogen and of carbon monoxide with (BOSS and HAWARD), A., ii, 623.
detection of chlorine in (MATHESON), A., ii, 272.

- Atmospheric air**, detection of hydrocyanic acid in (SIEVERTS and HERMSDORF), A., ii, 224.
 estimation of carbon dioxide in (FREUND), A., ii, 348.
- Atoms**, existence of (v. ANTHOFF), A., ii, 101.
 constitution of (MASSON), A., ii, 191.
 constitution and configuration of (KOHLEWEILER), A., ii, 639.
 structure of (GEHRCKE), A., ii, 323; (LANGMUIR), A., ii, 689.
 and Röntgen ray spectra (DE BROGLIE and DAUVILLIER), A., ii, 475; (VEGARD; SNEKAL), A., ii, 674.
 the periodic system and radioactivity (URBACH), A., ii, 251.
 and scattered radiation (GLOCKER and KAUFF), A., ii, 323.
 in relation to magnetism (OXLEY), A., ii, 82.
 and crystallography (TERTSCH), A., ii, 24.
 dynamics of (LANDÉ), A., ii, 189.
 stability of (MARSHALL), A., ii, 322; (RUTHERFORD), A., ii, 552.
 models of (FÖRSTERLING; SNEKAL), A., ii, 189; (MADLUNG and LANDÉ), A., ii, 190; (HENGLEIN), A., ii, 322; (M. and L. DE BROGLIE), A., ii, 223; (CREHORE), A., ii, 632.
 disintegration of, by α -particles (RUTHERFORD and CHADWICK), A., ii, 293.
 collisions between electrons and (KLEIN and ROSSELAND), A., ii, 291.
 exchange of energy in change of, into ions (AUDUBERT), A., ii, 297.
 energy of (LARMOR), A., ii, 632.
 latent polarities of (LAPWORTH), A., ii, 543.
 diameter of (WESTPHAL), A., ii, 394.
 of gaseous elements (RANKINE), A., ii, 192.
 dimensions of (LANDÉ), A., ii, 189; (BROUGHALL), A., ii, 445; (PIERCE), A., ii, 683; (BRAGG and BELL), A., ii, 689.
 cubical (LANDÉ), A., ii, 189; (MADELUNG and LANDÉ), A., ii, 190.
 heavy, distribution of electrons in (DAUVILLIER and DE BROGLIE), A., ii, 532.
 non-radiating (LARMOR), A., ii, 632.
- Atomic ether**, in relation to hydrogen atoms (ZEINDEK), A., ii, 191.
- Atomic nucleus**, structure of the (KIRSCH), A., ii, 150.
 structure and stability of the (HARKINS), A., ii, 582.
- Atomic nucleus**, charge on the (CHADWICK), A., ii, 7.
- Atomic theory**, energetic foundations of (URBAIN), A., ii, 543.
- Atomic volume**. See Volume.
- Atomic weight of aluminium** (RICHARDS and KREPELKA), A., ii, 48.
 of antimony (WILLARD and McALPINE), A., ii, 405.
 of bismuth (CLASSEN and NEY), A., ii, 119; (HÖNIGSCHMID and BIRCKENBACH), A., ii, 646.
 of cadmium (BAXTER and WILSON), A., ii, 640.
 of chlorine from minerals (CURIE), A., ii, 396.
 of fluorine (MOLES and BATUECAS), A., ii, 389.
 of germanium (MÜLLER), A., ii, 456.
 of lanthanum (BAXTER, TANI, and CHAPIN), A., ii, 451.
 of nickel, terrestrial and meteoric (BAXTER and PARSONS), A., ii, 338.
 of tellurium (BRUYLANTS and DESMET), A., ii, 448.
 of zinc (BAXTER and HODGES), A., ii, 639.
- Atomic weights** (ODDO), A., ii, 691.
 International Commission on (BRAYNER), A., ii, 691.
 report of the Committee on (BAXTER), A., ii, 321.
 report of the Swiss Commission on (BERNOLLI, DUTOIT, GUYE and TREADWELL), A., ii, 500.
 and mass spectra (ASTON), T., 677.
 periodicity of (FEHLE), A., ii, 188.
 harmony of (DROSTZ; SCHMIZ), A., ii, 101.
- Atoxyl** (*sodium p-aminophenylarsinate*), action of, on enzymes (RONA and BACH), A., i, 69.
- Attractylene** (TAKAGI), A., i, 733.
- Attractylol**, α -dihydroxy-, and its derivatives (TAKAGI), A., i, 733.
- Atrolactic acid**, resolution of, and its 7-menthyl ester (WREN and WRIGHT), T., 798.
- Atropine**, immunity of rabbits to (VAN DER HEYDE), A., i, 478.
- Attalea cohune** (cohune nut), globulin from (JOHNS and GEESDORFF), A., i, 212.
- Augite** from Japan (OHASHI), A., ii, 407.
 from Vesuvius and Etna (WASHINGTON and MERWIN), A., ii, 212.
 containing aluminium (TSCHERMAK), A., ii, 121.
- α -Aurothiolbenzoic acid**, and its potassium salt (FARBWERKZ VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 510.

- Aurothiosalicylic acid.** See *o*-Aurothiolbenzoic acid.
- Autoclave, glass** (SCHMIDT), A., ii, 265.
- Autolysis** (BRADLEY and FELSHER), A., i, 76.
source of acids developed in (MORSE), A., i, 906.
- Autooxidation**, limiting pressure of (JOURISSEN), A., ii, 99, 688; (WEISER and GARRISON), A., ii, 248.
- Autunites** in Portugal, age of (MUGUET and SEROIN), A., ii, 55.
- Auxochromes**, combined (KAUFFMANN), A., i, 422.
- β -Azides** of the anthraquinone series, preparation of nitro-derivatives of (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 747.
- 1-Azidoanthraquinone**, 4-chloro- and 4-nitro- (GATTERMANN and ROLFES), A., i, 818.
- 2-Azidoanthraquinone**, 1-nitro- (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 747.
- Azidomalonic acid** (CURTIUS and SIEBER), A., i, 653.
- Azidomethylmalonic acid** (CURTIUS and SIEBER), A., i, 654.
- ψ -Azimides** (SCHMIDT and HAGEN-DÜCKER), A., i, 597.
- Azines** (GERHARDT), A., i, 746.
- Azine-scarlets**, structure and colour of (COHEN and CHAMBERLAIN), T., 2055.
- Azobenzene**, solubility of, in croutchone (BRUND), A., i, 352.
- Azobenzene**, *p*-amino-, additive compound of 3:3:6-trinitrotoluene and (GITA and ANGELETTI), A., i, 557.
acetyl derivative, oxidation of (PASSERINI), A., i, 624.
- 2-amino-4'-hydroxy-** (CUSMANO), A., i, 133.
- 3:5:3':5'-tetrahydro-**, and its acetate (R. and W. MEYER and TAEGER), A., i, 20.
- chlorodinitrohydroxy-, chlorotritro-, nitroaminohydroxy-, and nitrohydroxy-derivatives** (BORSCHKE), A., i, 461.
- 2'-nitro-4'-cyano-1-hydroxy-, and 2':4'-nitro-4'-cyano-** (BORSCHKE), A., i, 460.
- 2:1:6-*trinitro*-4'-hydroxy-** (BORSCHKE), A., i, 624.
- β -Azobenzeneacetylmalonic acid**, β -*p*-amino-, ethyl ester (PASSERINI), A., i, 596.
- β -Azobenzeneacitraconic acid**, β -*p*-amino- (PASSERINI), A., i, 596.
- Azobenzene-*o,o'*-diarsinic acid** (KALD), A., i, 376.
- Azobenzene-3:3'-diarsinic acid**, and its sodium salt (LIEB), A., i, 697.
- Azobenzene-5-malonic acid**, 2:4-dinitro-4'-hydroxy-, ethyl ester (BORSCHKE), A., i, 462.
- β -Azobenzeneacetic acid**, β -*p*-amino- (PASSERINI), A., i, 596.
- Azo-colouring matters**, amino- and hydroxy- (JACOBS and HELLEBERGER), A., i, 44.
- Azo-compounds**, constitution of salts of, with acids (KEHRMANN), A., i, 447.
kinetics of the reduction of (GOLDSCHMIDT and BRAANAAS), A., ii, 181.
aromatic, reduction of (MOORE), A., i, 742.
- Azo-compounds**, hydroxy-, physico-chemical properties of (PUCENEC and GENNARI), A., i, 366, 623.
- Azodicarboxylic acid**, ethyl ester, introduction of hydrazine radicals by means of (DIELS), A., i, 280.
- Azoimide** (*hydrazic acid; nitrogen hydride*), action of, on nitrous acid (OLIVERI-MANDALÀ), A., ii, 346, 694.
- Azomethines**, preparation of (MAYER and BANSAL), A., i, 176.
- Azonium compounds**, quaternary substituted, containing an asymmetric nitrogen atom (SINGH and LAL), T., 210.
- Azopyrroles** (CUSA), A., i, 365.
- 1-Azetetrahydronaphthalene** (TETRAMIN G. m. b. H.), A., i, 406.
- Azotobacter***, effect of light on (KAYSER), A., i, 208, 291.
effect of, on alcoholic fermentation (KAYSER), A., i, 642.
- Azotobacter agilis***, nitrogen fixation by, under the influence of light (KAYSER), A., i, 79.
action of uranium salts on (KAYSER), A., i, 479.
- Azoxybenzene**, *p*-amino-derivatives and their acetyl derivatives (PASSERINI), A., i, 624.
- 3:5:3':5'-tetrahydro-** (R. and W. MEYER and TAEGER), A., i, 20.
- o*-hydroxylaminio-**, and its compound with phenylcarbimide (CUSMANO and DELLA NAVE), A., i, 622.
- Azoxy-compounds**, relation between diazo-compounds and (ANGELI), A., i, 361.
- o*-Azoxy-*p*-methoxyphenylacetic acid** (KERNACK, PERKIN, and ROBINSON), T., 1631.

B.

- Bacillus acetoethylicum*, production of acetone by (ARZBERGER, PETERSON, and FRED), A., i, 80.
- Bacillus lactis aerogenes*, fermentation of sugar by (NEUBERG, NORD, and WOLFF), A., i, 148.
- Bacillus mesentericus vulgaris*, biochemistry of (GRIMMER and WIE-MANN), A., i, 479.
- Bacillus proteus*, action of, on amino-acids (OTSUKA and HIRAI), A., i, 291.
- Bacillus subtilis*, oxidation of glycerol by (AUBEL), A., i, 641.
- Bacteria**, activity of, in relation to soil acidity (STEPHENSON), A., i, 916.
- action of, on amino-acids (OTSUKA; HIRAI), A., i, 291.
- production of volatile fatty acids by (ZOLLER and CLARK), A., i, 385.
- cycloclastic power of (RAISTRICK and CLARK), A., i, 479.
- measurement of the production and absorption of gas by (FLEMING and CLEMENGER), A., i, 207.
- influence of buffer salts and the reaction of media on metabolism by (WOLF), A., i, 208.
- lactic acid, velocity of growth of, in varied hydrogen-ion concentrations (SVANBERG), A., i, 80.
- proteolytic activity of (GORINI), A., i, 641.
- methane, physiology of (MENZ), A., i, 909.
- nitrate-forming, effect of organic nitrogen compounds on (FRED and DAVENPORT), A., i, 532.
- nodule, fixation of nitrogen by (WHITING and SCHOONOVER), A., i, 208.
- Bacterium methanicum*, physiology of (MENZ), A., i, 909.
- Balsam**, gurnum, detection of, by the Turner reaction (LUTHER), A., ii, 468.
- Peru, adulteration of (VAN ITALLIE), A., ii, 226.
- Barfoed's reagent**, improved form of (ROAF), A., ii, 525.
- Barium salts**, adsorption of (ODÉN and LANGELIUS), A., ii, 625.
- antagonism of sulphates to (KOH-MANN, LUCANUS, and MULHAUT), A., i, 147.
- Barium** *tri-* and *per*-thiocarbonates (YEOMAN), T., 43.
- chloride, equilibrium of, with calcium and strontium chlorides (SCHAEFFER), A., ii, 96.
- Barium chloride**, equilibrium of, with potassium and sodium chlorides (JANECKE; VORTISCH), A., ii, 95, 96.
- hydrides (TOMKINSON), A., ii, 453.
- oxides, higher (TRAUBE and SCHULZE), A., ii, 548.
- selenodithionate (MORGAN and SMITH), T., 1963.
- stibiothiosulphate (v. SZILÁGYI), A., ii, 207.
- Barium detection, estimation, and separation**—
- detection of (LUTZ), A., ii, 596.
- detection of, in presence of calcium and strontium (LUDWIG and SPIR-FSCU), A., ii, 276.
- estimation of, as sulphate (WINKLER), A., ii, 62.
- estimation of, volumetrically, in presence of strontium (KOLTHOFF), A., ii, 62.
- separation of, from calcium and strontium (KOLTHOFF), A., ii, 63.
- Barley**, germinating, enzymes in (MAESTRINI), A., i, 152.
- Baron**, the term (MASSON), A., ii, 191.
- Basalt-tuffs**, Styrian, enclosures in (SCHADLER), A., ii, 122.
- Base** $C_{10}H_9O_2N$, and its salts, from reduction of *o*-nitrobenzoylacetone (GABRIEL and GERHARD), A., i, 441.
- $C_{11}H_{23}O_5N$, and its hydrochloride, from catalytic reduction of thebaine (SPEYER and FREUND), A., i, 803.
- $C_{10}H_{12}O_2N_2$, from dihydrocupreonium oxide and alcoholic potash (WELLER), A., i, 287.
- $C_{20}H_{24}N_4$ and its derivatives, from formaldehyde and 4:6-diamino-*m*-xylene (PEARMAN), T., 720.
- Bases**, organic quaternary (GABRIEL), A., i, 58; (BOESE), A., i, 60.
- tricyclic (MOORE and DOUBLEDAY), T., 1170.
- estimation of, volumetrically (TIZARD and BOEREE), T., 132; (BRUNES), A., ii, 592.
- estimation of, in combination with strong or weak acids (KOLTHOFF), A., ii, 465, 516.
- ψ -Bases, researches on (MCLEOD and ROBINSON), T., 1470.
- Bassia* (malua), biochemistry of the flowers of (FOWLER, BEHRAM, BHATE, HASSAN, MAHDI-HASSAN, and IN-CAGANTI), A., i, 152.
- "Bayer 205"**, experiments with (HAENDEL and JOETTEN; MAYER and KRISS; WENYON), A., i, 908.
- Bean**, mung. See *Phaseolus aureus*.

- Bean**, navy, carbohydrates in (PETERSON and CHURCHILL), A., i, 843.
soja. See Soja-bean.
velvet. See *Stizolobium*.
- Bees-wax**. See under Wax.
- Beetroots**, polyoses in decaying (VOTOCER), A., i, 704.
- Bementite** from Washington, and its identity with caryopillite (PARDEE, LARSEN, and STEIGER), A., ii, 211.
- Benzaldehyde**, pyrogenic decomposition of, at high temperatures (PEYTRAL), A., i, 166.
phytochemical reduction of, by yeast (NEUBERG and HIRSCH), A., i, 480.
additive compound of phosphorus trichloride and (CONANT and MACDONALD), A., i, 69.
and *o*- and *p*-bromo-, condensation products of, with acid haloids (FRENCH and ADAMS), A., i, 343.
condensation of *m*-dimethylamino-phenol with (KRISHNA and POPE), T., 286.
condensation of dipeptide anhydrides with (SASAKI and HASHIMOTO), A., i, 197.
- Benzaldehyde**, *p*-amino-, *di*- and *tri*-bromo-, *di*bromoamino-, *di*bromo-chloro-, *di*bromoiodo-, *di*bromonitro-, and *tri*bromonitro-, and their derivatives (JANSE), A., i, 453.
o-chloro-, action of, on naphthylamines (MAYER and BANSAL), A., i, 175.
nitro-derivatives, metabolism of. See Metabolism.
p-nitro-, condensation of, with aromatic amines (LOWY and KING), A., i, 337.
2:4-dinitro-derivatives (LOWY and DOWNEY), A., i, 337.
2:4:6-trinitro-, condensation derivatives of (LOWY and BALZ), A., i, 337.
- Benzaldehydebromobenzoylhydrazones** (BUNING), A., i, 521.
- Benzaldehydec-anohydrin**, *o*-chloro- (KARER, FAUENGARTEN, GUNTHER, HARBER, and LANG), A., i, 262.
- Benzaldehydediphenylacetylhydrazones** (STAUDINGER and HAMMETT), A., i, 325.
- Benzaldehyde-4-nitro-2-carbethoxy-phenylhydrazone** (KENNER and WITHAM), T., 1055.
- Benzaldehyde-4-nitro-2-cyanophenylhydrazone**, *o*-hydroxy- (BORSCHKE), A., i, 480.
- Benzaldehyde-6-nitro-4-cyano-*m*-tolylhydrazone**, *o*-hydroxy- (BORSCHKE), A., i, 461.
- Benzaldehyde-*p*-nitrophenylhydrazones**, and *p*-nitro-, potassium and sodium salts (CIUSA), A., i, 64.
- Benzaldehydedinitrotolylhydrazones** (BRADY and BOWMAN), T., 899.
- Benzaldoxime-*N*-*p*-diethylaminophenyl ether**, *p*-nitro- (BARROW and GRIFFITHS), T., 215.
- Benzaldoxime-*N*-*p*-dimethylamino-phenyl ether**, *p*-nitro- (BARROW and GRIFFITHS), T., 214.
- Benzaldoxime-*N*-*p*-di-*n*-propylamino-phenyl ether**, *p*-nitro- (BARROW and GRIFFITHS), T., 215.
- Benzaldoxime-*N*-*p*-ethylaminophenyl ether**, *p*-nitro- (BARROW and GRIFFITHS), T., 215.
- Benzaldoxime-*N*-*p*-nitrophenyl ether**, *p*-nitro- (BARROW and GRIFFITHS), T., 216.
- Benzaldoxime-*N*-phenyl ether**, *p*-nitro- (BARROW and GRIFFITHS), T., 215.
- Benzamide**, thio-, condensation of benz nitrile and (ISHIKAWA), A., i, 728.
- Benzamidine**, condensation of ethyl diethoxyacetate with (JONES and MIKESKA), A., i, 57.
- Benzamidine**, iodo-, reactions of (BOCAULT and ROBIN), A., i, 272.
- 1:3-Benzadiazole-2-benzamide**, and its derivatives (BISTRZYCKI and LECGO), A., i, 456.
- 1:3-Benzadiazole-2-tetrachlorobenzole acid**, and its phenylhydrazide (BISTRZYCKI and LECGO), A., i, 456.
- 1:3-Benzadiazole-2-(3'-pyridine-2'')-carboxylic acid**, and its derivatives (BISTRZYCKI and LECGO), A., i, 455.
- Benzene**, formula of (v. WEINBERG), A., i, 778, 781.
structure of (CIAMICIAN and CIUSI), A., i, 329; (GNEZDA), A., ii, 394.
nucleus, radius of the (LORENZ), A., ii, 158.
substitution in the (DAVIES), I., 853, 876; (GIUA and GIUA), A., i, 853; (BOESEKEN, BRANDELL, and SCHOUTISSEN), A., ii, 34.
substitution and addition in the (GIUA, MARCELLINO, and CIUSI), A., i, 193.
influence of nitro-groups on the reactivity of substituents in the (BURTON and KENNER), T., 1065; (KENNER and WITHAM), T., 1053.
migration of alkyl groups in the (COPISAROW), T., 1806.
migration of halogen atoms in the (COPISAROW), T., 442.
ultra-violet, absorption spectrum of the vapour of (SCHULZ), A., ii, 74.

- enzene derivatives, spectrochemistry of (v. AUWERS and FRÜHLING), A., ii, 229.
 reactivity and conductivity in solutions of salts in (CADDY and BALDWIN), A., ii, 309.
 and nitro-, effect of finely-divided solids on the freezing points of (PARKER), A., ii, 430.
 and its halogen derivatives, density of, and the Mendeléev rule (HERZ and MEYER), A., ii, 381.
 vapour tension and molecular volume of mixtures of toluene and (SCHULZE), A., ii, 378.
 surface tension of (RICHARDS and CARVER), A., ii, 384.
 viscosity of mixtures of benzyl benzoate and (KENDALL and MONROE), A., ii, 241.
 adsorption of, by charcoal, alone, and from iodine solution (BAKER and KING), T., 454.
 equilibrium of, with chloroform and with ethyl ether (SCHULZE), A., ii, 388.
 distribution of silver perchlorate between water and (HILL), A., ii, 231.
 pyrogenic decomposition of, at high temperatures (PRYTRAL), A., i, 166.
 chlorination of, with sulphuryl chloride (SILBERRAD), T., 2029.
 and its derivatives, condensation of acetylene with, in presence of aluminium chloride (COOK and CHAMBERS), A., i, 832.
 condensation of chloral hydrate with, in presence of aluminium chloride (VAN LAER), A., i, 503.
 commercial, paraffin hydrocarbon in (TIMMERMANS), A., i, 490.
 action of, on blood (LAUNOY and LEVY-BRUHL), A., i, 204.
 enzene, pentabromo- (ECKERT), A., i, 854.
 5-bromo-1:2:4-trinitro- (GIUA), A., i, 551.
p-dichloro-, nitration of (HOLLEMAN, HOLLANDER, and VAN HAEFTEN), A., i, 503.
 trichloro-, and trichloronitro- (HOLLEMAN and VAN HAEFTEN), A., i, 167.
 trichloro-derivatives (HOLLEMAN), A., i, 405.
 tetra-, penta-, and hexa-chloro-derivatives (HOLLEMAN), A., i, 102.
 hexachloro-, formation of, in the electrolytic preparation of chlorine (BOURION and COURTOIS), A., i, 502.
 trichlorodinitro- (HÜFFER), A., i, 549.
 Benzene, *o*- and *m*-chloronitroso- (HAWORTH and LAPWORTH) T., 772.
m-dinitro-, additive compounds of (KARVE and SCDBOROUGH), A., i, 657.
 trinitro-, compounds of, with aromatic amines (LEY and PFEIFFER), A., i, 336.
 1:3:5-trinitro-, preparation and properties of (RADCLIFFE and POLLITT), A., i, 233.
 nitroso-, compounds of, with estragole, methyleugenol and myristicin (ALESSANDRI), A., i, 730.
 Benzenesazocetylacetone, *p*-bromo- (MORGAN and DREW), T., 622.
 4-Benzenesazo-1-acetylaminonaphthalene, 4-*p*-nitro- (KÖNIG and KÖHLER), A., i, 459.
 4-Benzenesazo-5-amino-2-phenyl-1:2:3-benzotriazole, and its hydrochloride (SCHMIDT and HAGENBÖCKER), A., i, 898.
 4-Benzenesazo-5-amino-2-phenyl-6-methyl-1:2:3-benzotriazole (SCHMIDT and HAGENBÖCKER), A., i, 899.
 4-Benzenesazo-1-benzoylaminonaphthalene, 4-*p*-nitro- (KÖNIG and KÖHLER), A., i, 459.
 4-Benzenesazo-5-bromo-*m*-cresol (v. AUWERS, BORSCHKE, and WELLEN), A., i, 572.
β-Benzenesazoisobutyl *p*-hydroxy-*o*-tolyl ketone, and *β*-*p*-bromo- and *β*-*p*-nitro- and their phenylhydrazones (v. AUWERS and LÄMMERHIRT), A., i, 404.
 Benzene-5-azo-6-chloro-2:4-tolylene-diamine, and 4'-nitro-, and their derivatives (MORGAN and JONES), T., 188.
 8-Benzenesazodihydroquinidine, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
 8-Benzenesazodihydroquinine, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
 Benzenesazo-1:3-diketohydrindene, *p*-nitro- (DAS and GHOSH), A., i, 897.
 Benzenesazoethylidihydrocupreine, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
 6-Benzenesazoflavone, (RUEHMANN), A., i, 431.
 2-Benzenesazoglyoxaline-4:5-dicarboxylic acid, 2-*p*-bromo- (FARGHER), T., 162.
 4-Benzenesazo-1:8-dihydroxynaphthalene (HELLER and KRETSCHMANN), A., i, 458.
 Benzenesazomesitylene, 2:4:6-trinitro- (MEYER and TOCHTERMANN), A., i, 895.

- 4-Benzeneazo-2-methylglyoxaline-5-carboxylic acid, 4-*p*-bromo- (FARGHER), T., 161.
- Benzeneazo-1-methylpyrrole, *p*-nitro- (CIUSA), A., i, 365.
- Benzeneazo- α -naphthols, *trinitro*- (BORSCHKE), A., i, 625.
- Benzeneazopaeonol (SONN), A., i, 279.
- β -*p*-Benzeneazophenoxybenzoinic acid, and its sodium salt and ethyl ester (RUHEMANN), A., i, 431.
- Benzeneazophenylaminocamphor, *p*-nitro- (FOSTER and SAVILLE), T., 796.
- 9-*p*-Benzeneazophenylamino-9:10-dihydroanthracene (BARNETT and COOK), T., 911.
- 4-Benzeneazo-2-phenylglyoxaline-5-carboxylic acid, 4-*p*-bromo-, and its sodium salt (FARGHER), T., 159.
- p*-Benzeneazophenyl-4'-6'-*m*-toluidine (GIUA and ANGELETTI), A., i, 557.
- Benzeneazopyrroles, nitro- (CIUSA), A., i, 365.
- 8-Benzeneazoquinoline, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
- 4-Benzeneazo-1-*p*-toluenesulphonamidonaphthalene, 4-*p*-nitro-, sodium salt (KÖNIG and KÖHLER), A., i, 459.
- 3-Benzeneazo-2-6-tolylenediamine (SCHMIDT and HAGENBUCKER), A., i, 899.
- cis*-Benzene-3:4-disulphonatodiethylenediaminecobaltic salts, bromo- (DUFF), T., 1986.
- Benzene-*o*-disulphonimide, and its salts (HOLLEMAN), A., i, 552.
- Benzene-1:3-disulphonylbis-1:4-naphthylenediamine (MORGAN and GRIST), T., 606.
- 2-Benzenehydrazoglyoxaline-4:5-dicarboxylic acid, 2-*p*-bromo- (FARGHER), T., 163.
- Benzenehydrazo-6-nitro 4 cyanotoluene, 2':4':6'-*trinitro*- (BORSCHKE), A., i, 461.
- Benzenesulphonic acid, benzyl and *n*-propyl esters (HAHN and WALTER), A., i, 652.
- Benzenesulphonic acid, *p*-*di* chloro-, compounds of metallic amines with (EHRHART), A., i, 339.
- d*-Hydroxy-, basic barium salt (AUGER and VARY), A., i, 667.
- Benzenesulphonylbenzeneazoacetic acid, ethyl ester, amide, and nitrile (TROGER and BERNDT), A., i, 744.
- Benzenesulphonyl-*p*-ethoxybenzeneazoacetic acid, ethyl ester, amide, and nitrile (TROGER and BERNDT), A., i, 745.
- Benzenesulphonylformyl cyanide, phenylhydrazone and its metallic salts (TROGER and BERNDT), A., i, 742.
- Benzenesulphonylgyoxylic acid, amide and ethyl ester, phenylhydrazones of, and their sodium salts (TROGER and BERNDT), A., i, 744.
- Benzenesulphonylmethoxybenzeneazoacetic acids, ethyl esters and amides (TROGER and BERNDT), A., i, 744.
- Benzenesulphonylmethoxybenzeneazobitriles, and their metallic salts (TROGER and BERNDT), A., i, 744.
- Benzenesulphonyltolueneazoacetic acids, ethyl esters and amides (TROGER and BERNDT), A., i, 744.
- Benzenesulphonyltolueneazoacetobitriles, and their metallic salts (TROGER and BERNDT), A., i, 744.
- Benzenesulphonyl-*as-m*-xyleneazoacetic acid, amide, ethyl ester and nitrile, and their metallic derivatives (TROGER and BERNDT), A., i, 745.
- Benzhydrol-2:4:2':4'-tetraacarbonylic acid, lactone, and its resolution (MILLS and NODDER), T., 2102.
- Benzhydrylidene-ethylenediacarbonylic acid. See $\alpha\beta$ -Oxido- $\gamma\gamma$ -diphenyl- $\Delta\beta$ -butenoic acid.
- Benzhydrylidenepyruvic acid. See α -Keto- $\gamma\gamma$ -diphenyl- $\Delta\beta$ -butenoic acid.
- Benzidine, 2:6:2':6'-*tetrabromo*-, and its salts (R. and W. MEYER and TAEGER), A., i, 20.
- Benzil (*di-benzoyl*), action of ammonia on (SCHONDELG), A., i, 272.
- behaviour of, in the organism (SIEBURG and HARLOFF), A., i, 146.
- phenylsemicarbazone (STAUDINGER and HAMMETT), A., i, 326.
- Benzil, 2:1:2':1'-*tetrahydroxy*-, and its derivatives (KARRER and FELLA), A., i, 312.
- Benzil- α -carboxylic acid (MAYER, SIEGLITZ and LUDWIG), A., i, 555.
- δ -Benzildioxime (ATAK and WHITVATES), T., 1184.
- Benzilic acid (HERZIG and SCHLEIFER), A., i, 244.
- behaviour of, in the organism (SIEBURG and HARLOFF), A., i, 146.
- Benziminazole picrate (MEISENHEIMER and WIEGER), A., i, 710.
- Benziminazole-2-ethyl- α -sulphonic acid (BACKER), A., i, 855.
- Benziminazole-2-sulphonic acid (BACKER), A., i, 855.
- Benzo- γ -bromo- β -hydroxypropylamide (BERGMANN, DREYER and RADT), A., i, 774.

- Benzo- γ -chloro- β -hydroxypropylamide**, and *p*-nitro. (BERGMANN, RADT, and BRAND), A., i, 689.
- Benzoichloropropylamide** (BERGMANN, RADT, and BRAND), A., i, 689.
- Benzoocoumaranones**. See Naphthasfuranones.
- Benzofulvene- α -carboxylic acid** (WISLICENUS and WEITEMEYER), A., i, 511.
- Benzoisomorpholine**, and its salts (V. BRAUN and BRAUNSDORF), A., i, 437.
- Benzohydrazide**, 2:6 *di*- and 2:4:6 *tri*-bromo- (BUNING), A., i, 520.
- Benzoic acid**, synthesis of, from benzene (McKIE and STRAUSS), A., i, 415. heat of combustion of (HENNING), A., ii, 379.
- Benzoic acid**, lithium and potassium salts (LANDRIEU), A., i, 109.
- Benzoic acid**, γ -aminopropyl, γ -anilino-propyl, γ -anisidinopropyl, γ -bromopropyl, and γ -methylaminopropyl esters (V. BRAUN and BRAUNSDORF), A., i, 436. and chloro- and nitro-, γ -aminopropylene and glyceryl esters (BERGMANN, BRAND and DREYER), A., i, 445. benzyl ester, viscosity of mixtures of benzene and (KENDALL and MONROE), A., ii, 241. γ -bromo- α -aminoisopropylester, hydrobromide (BERGMANN, DREYER, and RADT), A., i, 774. *n*- and *iso*-eugenol esters, melting points of (McKIE), T., 777. and *p*-chloro-, halogenacyl esters of (ULICH and ADAMS), A., i, 302. lubanyl ester, properties and constitution of (REINITZER), A., i, 352. lubanyl esters, and their dibromides (ZINKE and DZKINAL), A., i, 187.
- enzoic acid**, substituted derivatives, influence of position on the solubility of (SIDGWICK and EWRANK), T., 979.
- mono*- and *di*-amino-, and *mono*- and *di*-nitro-, allyl esters (ADAMS and VOLLWEILER), A., i, 416. amino- and nitro-, esters of (BRILL), A., i, 727. amino-, and nitro-, benzyl esters and their hydrochlorides (SHONLE and ROW), A., i, 341. amino- and nitro-*m*-hydroxy-derivatives (FROELICHER and COHEN), T., 1425. *p*-amino-, *n*-butyl ester (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 245.
- Benzoic acid**, *p*-amino-, diethylamino-ethyl ester. See Novocaine and Syvacaine.
- ethyl ester, anæsthetic action of, and its derivatives (MORGENROTH), A., i, 284. derivatives of (THOMS and RITSERT), A., i, 343. *N*-thiolacetyl derivative (BINZ and HOLZAPFEL), A., i, 31. *p*-amino- and *p*-nitro-, *o*-diethylaminocyclohexanyl esters of (OSTERBERG and KENDALL), A., i, 728. *di*-bromochloro-, *di*-bromonitroso-, *tri*-bromonitro-, and *tri*-bromonitroso- (JANSE), A., i, 453. 2-chloro-3-nitro-, and its esters (KENNER and STEBBINGS), T., 598. *m*- and *p*-hydroxy-, tetra-acetylglucose esters (KARRER, BAUMGARTEN, GENTHER, HARDER and LANG), A., i, 262. 2-iodo-3-nitro-, ethyl ester (KENNER and STEBBINGS), T., 599. nitro-derivatives, tolyl esters (HÄNGGI), A., i, 244. *p*-nitro-, *o*-chlorobenzyl ester (ROSENMUND and ZEITSCHE), A., ii, 631. *di*- and *tri*-nitro-, esters, action of alcohols on (SUDDOROUGH and KARVE), A., i, 606. 3- and 5-nitro-2-chloro-, ethyl esters, condensation of, with hydrazines (KENNER and WITHAM), T., 1053. *di*thio-, methyl ester (STAUDINGER and SIEGWART), A., i, 26. *m*-*dit*hio-. See Disulphidobenzoic acid.
- Benzoic acid *m*-disulphoxide** (SMILES and STEWART), T., 1797.
- Benzoic anhydride**, compound of sulphuric acid with (BERGMANN and RADT), A., i, 666.
- o*-Benzoicsulphinide. See "Saccharin."
- o*-Benzoicsulphinide, 6-chloro- (DAVIES), T., 880.
- Benzoïn**, Siam, constituents of (REINITZER), A., i, 351, 352. and hydroxy-, behaviour of, in the organism (SIEBER and HARLOFF), A., i, 146.
- Benzomorpholine**. See 2:3-Dihydro-1:4-benzisoxazine.
- Benzonitrile**, condensation of thiobenzamide and (ISHIKAWA), A., i, 728.
- Benzophenone**, thio-, action of diphenylketen on (STAUDINGER, KLEVER, BEREZA, and COKVI), A., i, 34.
- Benzophenonedicarboxylic acid**, tetra-chloro- (ECKERT and ENBLER), A., i, 872.
- Benzophenonediphenylacetylhydrazone** (STAUDINGER and HAMMETT), A., i, 326.

- Benzophenone-2-nitro-4-cyanophenyl-hydrazone** (BORSCHÉ), A., i, 460.
- Benzophenone-2:4:2':4':tetracarboxylic acid**, ketodilactone, optically active forms of, and its derivatives (MILLS and NODDER), T., 2094.
- Benzo-polymethylene compounds** (v. BRAUN and KIRSCHBAUM), A., i, 407.
- p-Benzoquinone**, formula of, and its decomposition by heat and by boiling water (STOLTZENBERG and STOLTZENBERG-BERGUS), A., i, 32.
- p-Benzoquinoneoxime**, hydrazones of (BORSCHÉ), A., i, 461.
- p-Benzoquinoneoxime-2-nitro-4-cyanophenylhydrazone** (BORSCHÉ), A., i, 460.
- Benzosuberone** (BORSCHÉ and ROTH), A., i, 166.
- Benzosuberone**, oximino- (BORSCHÉ and ROTH), A., i, 166.
- Benzothiazole methoperechlorate** (KÖNIG and TRICHEL), A., i, 733.
- Benzoxazoles**, relation between fluorescence and constitution of (HENRICH), A., i, 886.
- Benzoyl chloride**, condensation of ethylene with, in presence of aluminium chloride (NORRIS and COUCH), A., i, 32.
- compound of sulphuric acid with (BERGMANN and RADT), A., i, 666.
- Benzoylacetone**, *m*- and *p*-amino-, and *m*- and *p*-nitro- (GABRIEL and GERHARD), A., i, 883.
- N^β-Benzoyl-N^α acetyl-*o*-hydrazinobenzoic anhydride** (HELLER and JACOBSON), A., i, 440.
- Benzoyl-*p*-aminobenzoic acid**, *p*-nitro-, ethyl ester (THOMS and RISERT), A., i, 344.
- 6-Benzoylamino-5-benzoyloxy-1-phenylbenzoxazole** (HENRICH and ROEDEL), A., i, 883.
- Benzoylamino-5-benzoyloxy-1-phenyl-methyloxazole** (HENRICH, ROSSTEUSCHER, and MATULKA), A., i, 883.
- Benzoylamino-1-phenylmethyloxazole**, hydroxy- (HENRICH, ROSSTEUSCHER, and MATULKA), A., i, 883.
- β-Benzoylamino-*p*-phenylpropionophenone** (MCKENZIE and BARROW), T., 73.
- γ-Benzoylamino-propylene**, and *γ*-*p*-nitro-, benzohydrins (BERGMANN, BRAND, and DREYER), A., i, 445.
- Benzoylbromosuccinic acid**, *o*-nitro- (GABRIEL and GERHARD), A., i, 441.
- α-Benzoyl-β-2:4:6-trithrombenzoylhydrazine** (BUNING), A., i, 520.
- Benzoylcamphor**, keto-enolic tautomerism of, in solvents (VIXENORSE), A., i, 179.
- Benzoylcarbinol**, local anæsthetic properties of (HJORT and KATCMANN), A., i, 834.
- β-Benzoyl-α-*o*-chlorophenylethylene oxide** (WEITZ and SCHEFFER), A., i, 869.
- β-Benzoyl-α-*p*-anisyl-Δ^γ-butadiene**, α-hydroxy-, and its salts (DILTHEY and BURGER), A., i, 429.
- 1-Benzoyl-9:10-di-*p*-bromobenzoanthraquinol**, 1-*p*-chloro- (SCHOLL and HÄHLE), A., i, 874.
- 3-Benzoyl-2:6-dimethylpyridine-4-carboxylic acid**, and its picrate and ethyl ester (MUMM and BÖHME), A., i, 439.
- 3:4-Benzyleneanthranil** 5-chloro-7-nitro-, and 5-nitro- (GATTERMANN and ROLFES), A., i, 818.
- Benzyleneanthraquinoniminazole** (LIEB and SCHWARZER), A., i, 691.
- 1:2-*o*-Benzylene-1:3-benzdiazole**, tetra-chloro- (BISTRZYCKI and LEVCO), A., i, 456.
- β-Benzoyl-ethylaminovaleric acid**, and its ethyl ester (RUZICKA), A., i, 591.
- 9-Benzoylfluorene**, desmotropyl of (MEYER and GÖTTLIEB-BILLROTH), A., i, 422.
- Benzoylformaldehyde-nitrophenylhydrazones**, potassium salts of (CITSA), A., i, 63.
- Benzoyl glyceride** (FAIRBOURNE and TOMS), T., 1040.
- N-Benzoylhomocincholeponic acid**, ethyl ester, condensation of ethyl quinoline-4-carboxylate with (VEREINIGTE CHININFABRIKEN ZIMMER & Co.), A., i, 360.
- N^β-Benzoyl-*o*-hydrazinobenzoic acid** (HELLER and JACOBSON), A., i, 440.
- Benzoylhydrindenes** (BORSCHÉ and POMMER), A., i, 169.
- β-Benzoyl-α-*p*-methoxyphenylethylene oxide** (WEITZ and SCHEFFER), A., i, 869.
- 1-Benzoyl-5-methyl-Δ²-pyrrolone** (HILFERICH and DOMMER), A., i, 52.
- α-Benzoyloxycinnamic acid**, ethyl ester (GAULT and WEICK), A., i, 725.
- β-Benzoyloxyethylallylamine**, β-*p*-amino-, and β-*p*-nitro-, and their salts (v. BRAUN and BRAUNSDORF), A., i, 772.
- β-Benzoyloxyethylfurfurylallylamine**, β-*p*-amino- (v. BRAUN and BRAUNSDORF), A., i, 773.
- α-Benzoyloxyisohexoic acid**, ethyl ester (KODAMA), A., i, 220.
- Benzoyloxymethylene-epicampher** (FERKIN and TITLEY), T., 1099.
- Benzoyloxyphenylacetanilide** (PESERINI), A., i, 896.

- Benzoyloxyphenylacetyl-p-aminoazobenzene** (PASSERINI), A., i, 896.
- 3-Benzoyloxy-1-phenylbenzoxazole** (HENRICH and OFFERMANN), A., i, 887.
- 4-Benzoyloxy-1-phenylbenzoxazole** (HENRICH and ROEDEL), A., i, 888.
- 6-Benzoyloxy-1-phenylbenzoxazole** (HENRICH and WUNDER), A., i, 889.
- β -Benzoyloxypropylamine, γ -chloro-, hydrochloride** (BENGMANN, RADT, and BRAND), A., i, 689.
- 4-Benzoyloxy-m-toluic acid** (v. AUWERS), A., i, 119.
- Benzoylphenylethylene oxide** (DUFRAISSE), A., i, 114.
- β -Benzoyl- α -phenylethylphthalamic acid** (MCKENZIE and BARROW), T., 75.
- Benzoylpropionic acid**, asymmetric reduction of, in the body (THIERFELDER and SCHEMPF), A., i, 511.
- α -Benzoylpropionic acid, α -o-nitro-, ethyl ester** (GABRIEL and GERHARD), A., i, 441.
- 1-Benzoylpyridinium** (WEITZ, ROTH, and NELKEN), A., i, 804.
- β -Benzoyl- α -styrylethylene oxide** (WEITZ and SCHEFFER), A., i, 869.
- 1:3:3-Benzotriazole, 6-cyano-** (BORSCHKE), A., i, 460.
- 1:2:3-Benzotriazole-5-acetic acid, 6-nitro-** (BORSCHKE), A., i, 462.
- Benzyl chloride**, effect of substitution on the reaction of sodium ethoxide with (FRANZEN and ROSENBERG), A., i, 233.
- m-chloro-** (KENNER and WITHAM), T., 1460.
- 3-chloro-2-cyano-** (KENNER and WITHAM), T., 1458.
- p-nitro-**, condensation of nitroso-compounds with (BARROW and GRIFFITHS), T., 212.
- isobutyl sulphide** (ADAMS, BRAMLET, and TENDICK), A., i, 5.
- Benzylacetone-p-tolil** (KNOEVENAGEL and JÄGER), A., i, 786.
- Benzyl alcohol**, esters of, with an antispasmodic action (SHONLEANDROW), A., i, 341.
- Benzyl alcohol, 5-iodo-3-nitro-4-hydroxy-** (KHARASCH), A., i, 510.
- m-nitro-6-hydroxy-**, and its potassium salt (FISHMAN), A., i, 23.
- m-nitro-p-hydroxy-**, and its mercury derivatives (HART and HIRSCHFELDEN), A., i, 140; (KHARASCH), A., i, 510.
- benzylamine**, preparation of (MIGNONAC), A., i, 129.
- Benzylamino-2:8-dimethylphenazine, 3-amino-, methochloride**, preparation of (COHEN and CRABTREE), T., 2087.
- 2-Benzylaminopyridine**, and its platinum chloride (TSCHITSCHIBABIN, R. A. and A. A. KONOWALOWA), A., i, 451.
- Benzylidacetyl**, and its derivatives (DIELS and POETSCH), A., i, 675.
- Benzylethylaniline-4'-sulphonic acid** (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 715.
- 9-Benzylfluorene, 2:7-dibromo-, and 2:7-dibromo-9-chloro-** (SIEGLITZ), A., i, 111.
- bromo-, chloro-, and iodo-** (SIEGLITZ and JASSOT), A., i, 792.
- chloro-derivatives** (SIEGLITZ and SCHATZKES), A., i, 782.
- Benzylfurylcamphorylmethane** (WOLFF), A., i, 514.
- β -Benzylglutaric acid, $\alpha\alpha'$ -dicyano-, diamide of** (KON and STEVENSON), T., 93.
- Benzylhexamethylenetetrammonium salts** (HAHN and WALTER), A., i, 652.
- Benzylhexylcarbinol** (REICH, VAN WINCK, and WÄELLE), A., i, 333.
- Benzylethylhexylcarbinol** (REICH, VAN WINCK, and WÄELLE), A., i, 333.
- 4-Benzylhydantoin, 4-p-hydroxy-**, preparation of, and its derivatives (SCOTT and COHEN), T., 670.
- Benzylidene dibutyl sulphide**, and its derivatives (WHITNER and REID), A., i, 301.
- Benzylidene-p-acetylaminacetophenone, dibromide of** (GIUA and BAGHELLA), A., i, 781.
- Benzylidene-p-aminoazobenzene, 2:4:6-trinitro-** (LOWY and BALZ), A., i, 338.
- 6-Benzylideneamino-1-methyl-3-ethylbenzene** (MAILHE), A., i, 662.
- Benzylidene-p-aminophenol, 2:4:6-trinitro-** (LOWY and BALZ), A., i, 338.
- Benzylideneanisidines, 2:4-dinitro-** (LOWY and DOWNEY), A., i, 337.
- Benzylidenebenzosuberone** (BORSCHKE and ROTH), A., i, 166.
- Benzylidenebisphenylacetamide** (GUPTA), T., 300.
- Benzylidene-p-bromoaniline, p-nitro-** (LOWY and KING), A., i, 337.
- 2:4-dinitro-** (LOWY and DOWNEY), A., i, 337.
- Benzylidene-2:4:6-tribromoaniline, 2:4-dinitro-** (LOWY and DOWNEY), A., i, 337.
- α - and β -Benzylidenecarvones** (MÜLLER), A., i, 675.
- Benzylidenecoumaranones**, preparation of (v. AUWERS and ANSCHÜTZ), A., i, 682.
- Benzylidenediacyliminoxime**, reduction of (DIELS and POETSCH), A., i, 675.

- Benzylidenedihydrocarveol**, phenylurethane of (MÜLLER), A., i, 675.
- Benzylidenediphenylamine**, 2:4:6-trinitro- (LOWY and BALZ), A., i, 338.
- Benzylidene-ephedrinamine** (BERGMANN, RADT, and BRAND), A., i, 689.
- 9-Benzylidenefluorene**, 2:7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 781.
- chloro-, chlorobromo-, and chloronitro-derivatives (SIEGLITZ and SCHATZKES), A., i, 782.
- 2-nitro-9-*p*-chloro- (SIEGLITZ and SCHATZKES), A., i, 782.
- Benzylidenesharmanhydrochloride** (KERMACK, PERKIN, and ROBINSON), T., 1620.
- Benzylidenecyclohexane** (REICH, VAN WICK, and WÄLLE), A., i, 333.
- p*-Benzylidenehydrazinobenzoic acid**, ethyl ester (THOMS and RITSERT), A., i, 344.
- Benzylidenehydrazinomaleic acid** (CURTIUS and SIEBER), A., i, 658.
- Benzylidenehydrazinomethylmalonic acid** (CURTIUS and SIEBER), A., i, 653.
- Benzylidenemethylenedioxybenzoesuberone**, and *o*-hydroxy-, oxonium chloride (BORSCHKE, ROTH, and EBERLEIN), A., i, 166.
- Benzylidene- α - and - β -naphthylamines**, 2:4:6-trinitro- (LOWY and BALZ), A., i, 338.
- Benzylidenenitroanilines** *p*-nitro- (LOWY and KING), A., i, 337.
- 2:4-dinitro- (LOWY and DOWNEY), A., i, 337.
- Benzylidenenitronaphthylamines**, *o*-chloro- (MAYER and BANSAL), A., i, 176.
- Benzylidene-*m*-nitro-*p*-toluidine** (LOWY and KING), A., i, 337.
- Benzylidene-*o*-phenetidine**, *p*-nitro- (LOWY and KING), A., i, 337.
- 2:4-dinitro- (LOWY and DOWNEY), A., i, 337.
- Benzylidenephényleneaminoisammeline**, and its *p*-dichloride (PELLIZZARDI), A., i, 622.
- Benzylidenesulcylidene-*o*-phenylenediamine** (GALLAGHER), A., i, 715.
- Benzylidenetoluidines** *p*-nitro- (LOWY and KING), A., i, 337.
- 2:4:6-trinitro- (LOWY and BALZ), A., i, 338.
- Benzylidene-*m*-4-xylydine**, *p*-nitro- (LOWY and KING), A., i, 337.
- 2:4:6-trinitro- (LOWY and BALZ), A., i, 338.
- Benzylindazoles**, and their derivatives (v. AUWERS and SCHAICH), A., i, 807.
- Benzylmalonic acid**, *m*-chloro-, and its ethyl ester (KENNER and WITMAN), T., 1460.
- 1-Benzyl-3-methylbenzoxazole**, 5-hydroxy- (HENRICH and OFFERMANN), A., i, 887.
- Benzylmethylindazolium salts** (v. AUWERS and SCHAICH), A., i, 807.
- Benzyl- α - and - β -naphthylamines**, 2:4:6-trinitro- α -hydroxy- (LOWY and BALZ), A., i, 338.
- 1-Benzylloxazole**, 3- and 5-hydroxy- (HENRICH and OFFERMANN), A., i, 887.
- 2-Benzylloxymethyl-4:6-dimethylquinolines**, 2-*o*- and -*p*-nitro- (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- 2-Benzylloxymethyl-4-methylquinoline**, 2-*o*-nitro- (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- Benzylphosphinic acid**, α -hydroxy-, and its aniline salt (CONANT and MACDONALD), A., i, 70.
- 1-Benzylpyridinium** (WEITZ, NELKEN, and LUDWIG), A., i, 804.
- 1-Benzyl-2-pyridine** (TSCHITSCHIBABIN, R. A. and A. A. KONOWALOWA), A., i, 451.
- 1-Benzyl-2-pyridoneimide**, and its salts (TSCHITSCHIBABIN, R. A. and A. A. KONOWALOWA), A., i, 451.
- Benzylpyruvic acid**, action of ammonia on (BOUGAULT), A., i, 177.
- cis*-Benzylsulphocetato-diethylaminocobaltic salts** (DUFF), T., 1985.
- Benzylsulphonaminodimethylaniline** (CURTIUS and HAAS), A., i, 749.
- Benzylsulphonic acid**, anilide, azide, and hydrazide of, and their derivatives (CURTIUS and HAAS), A., i, 745.
- Benzylsulphon- α - and - β -naphthalides** (CURTIUS and HAAS), A., i, 748.
- Benzylsulphon-*p*-xylylide** (CURTIUS and HAAS), A., i, 748.
- 2-Benzylthiophen-5-mercurichloride** (STEINKOPF), A., i, 632.
- Benzyl-*o*-toluidine**, 2:4:6-trinitro- α -hydroxy- (LOWY and BALZ), A., i, 338.
- Beri-beri**, glyoxalase in (FINDLAY), A., i, 478.
- Beryllium**. See Glucinum.
- Beta vulgaris***, anthocyanins of (SCHÜDEL), A., i, 485.
- Betanidin** (SCHÜDEL), A., i, 485.
- Betanin** (SCHÜDEL), A., i, 485.
- Bile acids** (WIELAND and WENZEL; WIELAND and BOERSCH), A., i, 173; (SCHENCK), A., i, 179.
- constitution of (BORSCHKE), A., i, 738.
- unsaturated (BODECKER and VOIS), A., i, 865.

- Bile acids**, estimation of, in bile (SCHMIDT), A., ii, 284.
- Bile salts** (WIELAND and KULENKAMPF), A., i, 112; (WIELAND), A., i, 113.
- effect of, on respiration (BROOKS), A., i, 385.
- Bilirubin** (KÜSTER), A., i, 626.
- estimation of, in blood serum (HASELHORST), A., ii, 472.
- Biloidanic acid** (SCHENCK), A., i, 179.
- Binary mixtures**. See Mixtures, binary.
- systems, influence of substitution on equilibria in (KREMANN, LÜFFER, and ZAWODSKY), A., i, 561; (KREMANN and ZAWODSKY), A., i, 601; (KREMANN and HOHL; KREMANN and FRITSCH), A., i, 662.
- Biochemistry**, dielectric constants in (KELLER), A., i, 478.
- Biological substances**, examination of, by means of X-rays (HERZOG and JANCKE), A., i, 12.
- Bioluminescence** (KANDA), A., i, 77, 530.
- Birdlime**, Japanese (YANAGISAWA), A., i, 760.
- 2,3-Bis-3-chloro-2-cyanobenzylacetoacetic acid**, ethyl ester (KENNER and WHITMAN), T., 1459.
- 2,4-Bis(trichloromethyl-6- β -trichloro- α -hydroxyethyl-1:3-benzodioxine-5-carboxylic acid**, lactone of, and its derivatives (ALIMCHANDANI and MELDRUM), T., 206.
- 1:2'-Bis(dihydro- $\alpha\beta$ -naphthafuran)-2:1-dione**, 4:4'-dibromo- (FRIES and FREELSTEDT), A., i, 432.
- Bis- Δ^1 -dihydronaphthalene** (v. BRAUN and KIRSCHBAUM), A., i, 408.
- Bis- $\alpha\beta$ -dimethylamylamine** (MAILHE), A., i, 314.
- Bis- $\gamma\gamma$ -dimethylbutylamine** (MAILHE), A., i, 314.
- Bis- $\alpha\beta$ -dimethylpropylamine** (MAILHE), A., i, 314.
- $\alpha\beta$ -Bisdiphenylene- $\Delta\gamma\gamma$ -butadiene**, 2:2':1:1'-tetrabromo- (STAHRFOSS), A., i, 335.
- 2:5-Bisethylcarboxyanilino- p -benzoquinones** (LINKE), A., i, 186.
- pp' -Bisiminocamphordiphenylamine** (B. K. and M. SINGH and LAI), T., 1975.
- Bis[4'-methoxy-2'- p -toluenesulphonylbenzenazo]-4:6-dihydroxybenzene** (HALBERKANN), A., i, 661.
- Bis-methylisomylketazine** (MAILHE), A., i, 314.
- Bis- α -methylbutylamine** (MAILHE), A., i, 314.
- Bis-methylisobutylketazine** (MAILHE), A., i, 314.
- Bismethylenanthranilo/trisulphide** (BINZ and HOLZAPFEL), A., i, 31.
- Bismethylhexamethylenetetrammonium sulphate** (HAHN and WALTER), A., i, 651.
- Bis- γ -methyl- α -isopropylbutylamine** (MAILHE), A., i, 314.
- Bis-methylpropylketazines** (MAILHE), A., i, 314.
- Bismuth**, atomic weight of (CLASSEN and NET), A., ii, 119; (HÖNIGSCHMIDT and BIRCKENBACH), A., ii, 646.
- crystalline structure of (OGG; JAMES), A., ii, 513.
- Bismuth alloys** with lead and tin (WÜRSCHMIDT), A., ii, 646.
- with potassium and sodium, electromotive force of (KREMANN, FRITSCH, and LIEBL), A., ii, 342.
- with selenium (TOMOSHIGE), A., ii, 207.
- with thallium, electromotive properties of (KREMANN and LOBINGER), A., ii, 157.
- Bismuth salts**, treatment of syphilis with (SAZERAC and LEYADITI; FOURNIER and GUENOT), A., i, 908.
- estimation of nitrates in (McLACHLAN), A., ii, 518.
- Bismuth triiodide**, action of phenyldimethylarsine with (BURROWS and TURNER), T., 1449.
- sulphide, equilibrium of, with antimony sulphide (TAKAHASHI), A., ii, 208.
- sulpho-telluride, antimoniferous (PIÑA DE ROBRES), A., ii, 267.
- Bismuth organic compounds** (CHALLENGER and ALLPRESS), T., 913.
- Bismuth estimation** :—
- estimation of, gravimetrically, as phosphate (SCHÖLLER and WATERHOUSE), A., ii, 135.
- Bismuthines**, tertiary aromatic, halogen derivatives, action of, with magnesium and mercury organic compounds (CHALLENGER and ALLPRESS), T., 913.
- Bismuthobromocyanides** (VOURNAZOS), A., i, 232.
- Bismutoplagonite** (SHANNON), A., ii, 52.
- Bisnaphthylene** (v. BRAUN and KIRSCHBAUM), A., i, 407.
- Bis-(trinitrobenzenazo)-azoxybenzene** (BORSCHKE), A., i, 625.
- 6:6-Bisphenoxarsine**. See Phenoxycacodyl.
- Bis-isopropylisobutylketazine** (MAILHE), A., i, 314.
- $\beta\beta'$ -Bistetrahydronaphthalene** (v. BRAUN and KIRSCHBAUM), A., i, 408.
- Bisthiolacetylaminophenyl- pp' -arsenic sesquisulphide** (BINZ and HOLZAPFEL), A., i, 31.

- Blood**, physico-chemical equilibrium in (HENDERSON), A., i, 473.
 opacity of (HOLKER), A., i, 633.
 relation of the migration of ions in, to the transport of carbon dioxide (DOISY and EATON), A., i, 753.
 coagulation of (VINES), A., i, 525, 905; (GRATIA), A., i, 753.
 calcium in (RICHTER-QUITTNER), A., i, 285.
 absorption of calcium salts in (MASON), A., i, 693.
 children's, calcium in (DENIS and TALBOT), A., i, 828.
 distribution of calcium and phosphates in (JONES and NYE), A., i, 753.
 effect of citrates, malates, and phosphates on the calcium in (CLARK), A., i, 633.
 bicarbonate content of, after administration of sodium hydrogen carbonate (S. P. and H. A. REIMANN), A., i, 524; (REIMANN and SAUTER), A., i, 525.
 distribution of carbon dioxide in corpuscles and plasma of (JOFFE and POULTON; CAMPBELL and POULTON), A., i, 141; (MELLANBY and THOMAS), A., i, 142; (SMITH, MEANS, and WOODWELL), A., i, 474.
 combined chlorine in (FALTA and RICHTER-QUITTNER), A., i, 350.
 chlorine content of, after ingestion of sodium chloride (DENIS and SISSON), A., i, 531.
 cholesterol and its esters in (KNUDSON), A., i, 474.
 partition of cholesterol and its esters between corpuscles and plasma in (RICHTER-QUITTNER), A., i, 285.
 arterial and venous, dextrose in (EGE and HENRIQUES), A., i, 905.
 fats and lipoids in (LEMELAND), A., i, 633.
 lecture experiment on the nitrogen in (HUGONENQARD FLORENCE), A., i, 632.
 distribution of phosphates between plasma and corpuscles in (IVERSEN), A., i, 380.
 children's, distribution of phosphoric acid in (MCKELLIPS, DE YOUNG and BLOOR), A., i, 698.
 human, phosphates in (FEIGL), A., i, 73, 143.
 potassium content of (MYERS and SHORT), A., i, 525, 528.
 nature of the reducing substance in (COOPER and WALKER), A., i, 698.
- Blood**, salicylic acid and its salts in (HANZLIK), A., i, 698.
 sugar in (FEIGL), A., i, 143; (EGE), A., i, 285; (LANGFELDT), A., i, 473.
 physico-chemical state of sugars in (ONOHARA), A., i, 904.
 crystalline uric acid compound in (DAVIS and BENEDICT), A., i, 633.
 action of benzene and cyclohexane on (LAUNOY and LÉVY-BRUHL), A., i, 204.
 action of glycerol on (SIMON), A., i, 204.
 arrest of glycolysis in (AMBAUD), A., i, 204.
 changes in, after pyloric obstruction (HASTINGS, and C. D. and H. A. MURRAY), A., i, 379.
 acid-base balance in (COLLIP), A., i, 379; (VAN SLYKE), A., i, 523; (EVANS; HALDANE), A., i, 904.
 alkalinity of (MELLANBY and THOMAS; DAVIE, HALDANE, and KENNAWAY), A., i, 142.
 effect of carbon monoxide asphyxia on (HAGGARD and HENDERSON), A., i, 752.
 of lower vertebrates (COLLIP), A., i, 379.
 effect of temperature on the reaction of (DE CORRAL), A., i, 379.
 determination of the reaction of, colorimetrically (DALE and EVANS), A., i, 142.
 of the silk-worm (KAWASE, SUDA, and SAITÔ), A., i, 379.
- Blood detection and estimation**:-
 analyses of gases of (STRAUB and MEIER), A., i, 72.
 Barcroft's apparatus for (PARSONS), A., i, 632.
 detection of, in faeces (VAN ECK), A., ii, 472.
 detection of albumoses in (ACHARD and FEUILLIÉ), A., i, 380.
 human, detection of formic acid in (STEFF), A., i, 203.
 estimation of arsenic in (ENGELSON), A., ii, 59; (SCHEFFLER), A., ii, 213.
 estimation of calcium in (VINES), A., i, 525; (THRO and EHN), A., i, 908; (KAHN and HADJOPOULOS), A., ii, 558.
 estimation of calcium, magnesium, potassium, and sodium in (TISDALE and KRAMER; LABBÉ and DE TOSI), A., ii, 655.
 estimation of carbon monoxide in (NICLOUX), A., i, 204; ii, 594.
 estimation of chlorides in (WETMORE), A., ii, 126.

Blood detection and estimation:—

- and blood plasma, estimation of chlorides in (SMITH, WHITEHORN; AUSTIN and VAN SLYKE), A., ii, 272.
- estimation of cholesterol in (FEIGL), A., ii, 220.
- estimation of dextrose in (IONESCU and VARGOLICI), A., ii, 220.
- estimation of formic acid in (STEPP and ZUMBUSCH), A., i, 381.
- estimation of hæmoglobin in (MILLER and SWEET), A., ii, 720.
- estimation of lactic acid in (HARROP), A., ii, 715.
- estimation of non-protein nitrogen in (STREHLE), A., ii, 128.
- estimation of quinine in, nephelometrically (ACTON and KING), A., i, 474.
- estimation of sodium in (DOISY and BELL), A., ii, 413; (KRAMER and TISDALL), A., ii, 463.
- estimation of sugar in (EISENHARDT), A., ii, 283; (CLOGNE and RICHAUD), A., ii, 355; (PONDER and HOWIE), A., ii, 417.
- estimation of urea in (LAUDAT), A., ii, 223; (WATSON and WHITE), A., ii, 358; (FEIGL), A., ii, 359; (STROHMANN and FLINTZER), A., ii, 664.
- estimation of uric acid in (ZALESKI and SACHNOVSKA), A., ii, 226; (OSEACKI), A., ii, 227; (BIFFI), A., ii, 664.
- Blood-corpuseles**, chemical composition of (FALTA and RICHTER-QUITTNER), A., i, 285.
- viscosity of suspensions of (HATSCHER), A., i, 72.
- red, influence of digitalis substances on the ion penetration in (STRAUB and MEIER), A., i, 72.
- permeability of, for amino-acids (KOZAWA and MIYAMOTO), A., i, 474.
- Blood-pigments** (KÜSTER), A., i, 203.
- Blood-serum**, physico-chemical investigations on (RUSZNYÁK), A., i, 286.
- calcium in (V. MEYSENBUG, PAPPENHEIMER, ZUCKER, and MURRAY; V. MEYSENBUG and McCANN), A., i, 753.
- lipochrome in (VAN DEN BERGH and MÜLLER), A., i, 286.
- proportions of protein nitrogen and residual nitrogen in (QUAGLIARIELLO), A., i, 73.
- tryptophan content of (V. FÜRTH and NOBEL), A., i, 74.

Blood-serum, detection of bilirubin in (HASELHORST), A., ii, 472.

estimation of protein degradation products in (BACH and SBARSKY), A., ii, 71.

Body fluids, physico-chemical investigations on (RUSZNYÁK), A., i, 73, 286.

removal of proteins from (MUKAI), A., ii, 593.

Boiling points, determination of (ARREGUINE), A., ii, 240.

apparatus for (SPENCER), A., ii, 240; (MENZIES and WRIGHT), A., ii, 622.

relation between critical temperature and (PAUD'HONNE), A., ii, 83, 84, 376.

relationships of, to the critical constants (LORENZ and HERZ; WALDEN), A., ii, 433.

Boracite, isomorphism of (BRAUN), A., ii, 387; (MÜGGE), A., ii, 576.

Borax. See Sodium borate.

Boric acid. See under Boron.

Borneol, preparation of (FABRIQUES DE PRODUITS CHIMIQUES DE THANN ET DE MULHOUSE), A., i, 425.

and its acyl derivatives, estimation of (MARTON), A., ii, 355.

iso **Bornyl esters**, preparation of, from pinene derivatives (WESSON), A., i, 796.

Bornylene, preparation of pure (RUZICKA and ROTHHEIM), A., i, 36.

iso **Bornyltrimethylammonium iodide** (RUZICKA and ROTHHEIM), A., i, 36.

Boron, preparation of (MEYER and ZAPFNER), A., ii, 328.

nitride, preparation of, pure (MEYER and ZAPFNER), A., ii, 329.

luminescent (TIEDE and BÜSCHER), A., ii, 74.

Boric acid, phosphorescence of (TIEDE), A., ii, 75.

effect of hydroxy-acids, keto-acids, and polyhydric alcohols on the conductivity of (BOESEKEN), A., i, 843, 844; (BOESEKEN and FELIX), A., i, 844.

effect of phenolcarboxylic acids on the conductivity of (BOESEKEN and OTWEHAND), A., i, 861.

action of alcohols with (DUBBISAY), A., i, 535.

estimation of sugars in (GILMOUE), A., ii, 221.

Boron organic compounds:—

triethyl and trimethyl (STOCK and ZWIDLER), A., i, 328.

Botrytis cinerea, action of alkaloids on (NOBECOURT), A., i, 485.

Boulangerite (SHANNON), A., ii, 52.

Brain, composition of, in dementia precox (PIGHINI), A., i, 288.

- Brain**, lecithin of (LEVENE and ROLF), A., i, 476.
 estimation of mercury in the (HÜSGEN), A., i, 145.
- Brass**, corrosion of, by sea-water (BELLADEN), A., ii, 588.
 containing tin, tempering of (GUILLET), A., ii, 405.
 electro-analysis of (A. and NME. A. LASSIEUR), A., ii, 712.
 estimation of lead in (GLAZE), A., ii, 559.
- Brassica campestris chinoleifera* (Chinese colza), as a substitute for mustard seed (VIEHOEVER, CLEVINGER, and EWING), A., i, 212.
- Bright's disease**, salt retention in (FEIGL), A., i, 73.
- Bromal- β -isobutylidenehydrazone** (KNÖPFER), A., i, 160.
- Bromal-isopropylidenehydrazone** (KNÖPFER), A., i, 160.
- Bromates**. See under Bromine.
- Bromine**, discovery of (DIERGART), A., ii, 42.
 spectra of (KIMURA), A., ii, 140, 141.
 photochemical reaction between *cyclohexane* and (NODDACK), A., ii, 588.
 equilibrium of, with tellurium (DAMIENS), A., ii, 546.
 action of, on alkyl haloids, in presence of iron (KRONSTEIN), A., i, 153.
 presence of, in animal tissues (DAMIENS), A., i, 77; (PILLAT), A., i, 78.
- Hydrobromic acid**, infra-red absorption spectrum of (IMES), A., ii, 5.
 equilibrium of allylene with (MAASS and RUSSELL), A., i, 761.
- Bromides**, action of, with lipoids (OPPENHEIMER), A., i, 288.
 detection and estimation of (JONES), A., ii, 516.
- Bromates**, estimation of, electrometrically (HENDRIXSON), A., ii, 651.
- Bromine detection and estimation**:—
 detection of, in presence of iodine (LUDWIG), A., ii, 273.
 estimation of, in small quantities (OPPENHEIMER), A., ii, 273.
 estimation of, in salt waters (LEBEAC and PICON), A., ii, 591.
 estimation of, in animal tissues (DAMIENS), A., i, 476.
- Bromural**. See *iso*-Valerylcarbamide- α -bromo-.
- Bulbocapninecarboxylic acid**, ethylester, and its methyl ether (GADAMER and KNOCH), A., i, 580.
- Bulbocapninedicarboxylic acid**, ethyl ester (GADAMER and KNOCH), A., i, 580.
- Burette** for titration of alkali hydroxides (BESSEMAN), A., ii, 213.
 device for filling (BRUHNS), A., ii, 705.
- Burner**, Bunsen, made from glass tubing (RUDOLPH), A., ii, 325.
 rotary (LOCKEMANN), A., ii, 447; (v. HEYGENDORFF), A., ii, 545.
- Butaldehyde**, $\alpha\beta$ -dichloro- (MOURET, MURAT, and TAMPIER), A., i, 160.
- n*-Butaldehyde-2:4-dinitro-*m*-tolylhydrazones** (BRADY and BOWMAN), T., 899.
- cyclo*Butane**, spectrochemistry of derivatives of (ÖSTLING), A., i, 346.
- Butane**, $\alpha\beta$ -thio- (DELEPINE and JAFFEUX), A., i, 156.
- cyclo*Butane-1:5-*spiro*-1-amino-2:4:6-triketohexahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-4:6-diketophenyltetrahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-2-imino-4:6-diketohexahydropyrimidine** (DOX and YODER), A., i, 361.
- Butane- γ -sulphonic acid**, β -chloro-, barium salt (POPE and SMITH), T., 399.
- n*-Butane- $\alpha\beta\gamma\delta$ -tetracarboxylic acid**, and its ethyl ester and anhydride (INGOLD), T., 348.
- n*-Butane- $\alpha\beta\gamma\delta$ -tetracarboxylic acid**, α -cyano-, ethyl ester (INGOLD), T., 348.
- cyclo*Butane-1:5-*spiro*-2-thio-4:6-diketohexahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-2:4:6-triketo-1-benzylhexahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-2:4:6-triketo-1-ethylhexahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-2:4:6-triketohexahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-2:4:6-triketo-1-methylhexahydropyrimidine** (DOX and YODER), A., i, 361.
- cyclo*Butane-1:5-*spiro*-2:4:6-triketo-1-phenylhexahydropyrimidine** (DOX and YODER), A., i, 361.
- Butenylbenzene**, 4-chloro- (MORGAN and HICKINBOTTOM), T., 1886.
- N*-(α -Butoxyethyl)-*m*-nitroaniline**, *N*- β -trichloro- (WHEELER and SMITH), A., i, 411.
- 1-*iso*Butoxymethylpiperidine**, preparation of (MCLEOD and ROBINSON), T., 1474.
- Butter**, effect of heat and aeration on the nutritive value of (DUMMOCK and COWARD), A., i, 475.

Butter, estimation of fat in (HEPBURN), A., ii, 716.

See also Oatoba butter.

Butyl vinyl sulphide (WHITNER and REID), A., i, 300.

n-Butyl series, studies in the (MORGAN and HICKINBOTTOM), T., 1879.

sec-Butyl alcohol, preparation of (WEIZMANN and LEGG), A., i, 493.

n-Butylaniline, salts and benzoyl derivative of (MILLS, HARRIS, and LAMBOURNE), T., 1298.

n-Butylbenzene, 4-chloro-, and 4-chloro- α -dibromo- (MORGAN and HICKINBOTTOM), T., 1886.

2:4-dihydroxy- (JOHNSON and LANE), A., i, 341.

n- and *iso*-Butyleanoacetic acids, and their salts and esters (HESSLER and HENDERSON), A., i, 317.

Butyloxybenzoin (BILLARD), A., i, 568.

*iso*Butylene (Δ^7 -butylene) tetrabromide (KIONSTEIN), A., i, 154.

2-*n*-Butylnaphthylamine, 1-nitroso-, and its derivatives (FISCHER, DIETRICH, and WEISS), A., i, 58.

β -*iso*Butylstyrene. See α -Phenyl- δ -methyl- Δ^8 -pentene.

1-*n*-Butylthecbromine (BILTZ and MAX), A., i, 590.

n-Butylthiolacetic acid, and its salts and derivatives (UYEDA and REID), A., i, 8.

β -Butylthioethyl alcohol, and its derivatives (WHITNER and REID), A., i, 300.

Butyric acid, bornyl ester, preparation of (DUBOSC and LUTTINGER), A., i, 115.

n-Butyric acid, α -chloro-*iso*butyl and α -chloro-*n*-heptyl esters (ULICH and ADAMS), A., i, 301.

α -glucose ester (HESS, MESSMER, and KLETZL), A., i, 306.

dl-Butyric acid, β , γ -dihydroxy-, resolution of, and derivatives of the optically active acids (GLATTFELD and MILLER), A., i, 7.

Butyro-2:4-dimethylphenone-5-azo- β -naphthol (MORGAN and HICKINBOTTOM), T., 1890.

n-Butyropheneazo- β -naphthols (MORGAN and HICKINBOTTOM), T., 1884.

n-Butyrophene-3-azo- β -naphthylamine (MORGAN and HICKINBOTTOM), T., 1884.

n-Butyrophene-3-azoresorcinol (MORGAN and HICKINBOTTOM), T., 1884.

1-*iso*Butyrylhydroxy-2-methoxybenzene (FLEISCHER and STEMMER), A., i, 258.

*iso*Butyrylphenol (FLEISCHER and STEMMER), A., i, 254.

C.

Caballus equus (horse), fat of (HEIDUSCHKA and STEINBUCK), A., i, 833.

Cacao, estimation of alkaloids in (CERIOTTI), A., ii, 470.

Cacodyl, and its derivatives, action of alkyl haloids on (STEINKOFF and SCHWEN), A., i, 694.

Cadinene, behaviour of, on heating with powdered sulphur (RUZICKA and MEYER), A., i, 573.

hydrohaloids (HUECKE), A., i, 258.

Cadmium, atomic weight of (BAETER and WILSON), A., ii, 640.

ultra-violet spark spectrum of (L. and E. BLOCH), A., ii, 286.

chemical constant of (HEIDHAUSEN), A., ii, 240.

reduction with, in volumetric analysis (TREADWELL), A., ii, 523.

Cadmium alloys with antimony, electromotive properties of (KREMANN and GMAHL-PAMMER), A., ii, 156.

thermo-electric properties of (FISCHER and PFLEIDERER), A., ii, 296.

with silver, electromotive force of (KREMANN and RUDERER), A., ii, 11.

with thallium, electromotive properties of (KREMANN and LOBINGER), A., ii, 157.

Cadmium salts, influence of, on alcoholic fermentation (KOSTYCHEV and SUBKOVA), A., i, 149.

Cadmium arsenate, gels of (KLEMP and V. GYULAY), A., ii, 507.

chloride and iodide, thermochemical data of (TAYLOR and FERROTT), A., ii, 303.

Cadmium estimation:—

estimation of, electrolytically (BAXTER and WILSON), A., ii, 640.

estimation of, gravimetrically (WINKLER), A., ii, 656.

Cæsium, spectrum of (DUNOYER), A., ii, 529; (BARTELS), A., ii, 565.

vacuum arc spectrum of (MEISSNER), A., ii, 565.

Cæsium chloride and nitrate, heats of dilution and specific heats of (RICHARDS and ROWE), A., ii, 380.

ruthenichloride (KRAUSS), A., ii, 514.

cyanides (MEYER), A., i, 501.

selenodithionate (MORGAN and SMITH), T., 1068.

gallium alum, fractional crystallisation of (BROWNING and PORTER), A., ii, 265.

Caffeine, distinction between theobromine and (MALME), A., ii, 380.
 estimation of (UGARTE), A., ii, 470.
*iso*Caffeine. See 1:3:9-Trimethyl- Δ -isoxanthine.
*isocapro*Caffeine. See 3:7-Dimethylcaffolide.
Calcite, equilibrium of aragonite with, in aqueous solution (BÄCKSTRÖM), A., ii, 317.
Calcium, spectrum of (SAUNDERS), A., ii, 382.
 arc and spark spectra of (SEELIGER and THAER), A., ii, 568.
 numerical relation between strontium and (SAKOSCHANSKY), A., ii, 501.
 metabolism. See Metabolism.
Calcium compounds in blood (DENIS and TALBOT), A., i, 828.
 in white of eggs (KREIS and STÜDINGER), A., i, 906.
Calcium salts, antagonism of magnesium and (KOCHMANN, LUCANUS, and MÜLTHAUP), A., i, 147.
 function of, in the nutrition of seedlings (TRUE), A., i, 837.
 physiological action of (HÖBER), A., i, 74.
 absorption of, in blood (MASON), A., i, 698.
 in blood-serum (v. MEYSENBUG, PAPPENHEIMER, ZUCKER, and MURRAY; v. MEYSENBUG and MCCANN), A., i, 753.
 distribution of, in the blood of children (JONES and NYE), A., i, 753.
 effect of citrates, malates and phosphates on, in blood (CLARK), A., i, 633.
 assimilation of, in diet (HART, STENBOCK, and HOPPERT), A., i, 829.
 fixation of, by animal tissues (FREUDENBERG and GYÖRGY), A., i, 382.
 elimination of, in urine (SCHIFF and STRANSKY), A., i, 381.
 effect of fatty acids on the excretion of (TELFER), A., i, 700.
Calcium carbide, preparation of (HACKSPILL and BOTOLFSSEN), A., ii, 549.
 crystalline characters of (WARREN), A., ii, 549.
 carbonate, dissociation of (JOLIBOIS and BOUVIER), A., ii, 438.
 equilibrium of, with carbon dioxide and water (MASSINK; KOLTHOFF), A., ii, 59.
tri- and *per-thiocarbonates* (YEOMAN), T., 47.
 chloride, equilibrium of, with barium and strontium chlorides (SCHAEFER), A., ii, 96.

Calcium chloride, equilibrium of, with potassium and sodium chlorides (SCHOLICH), A., ii, 97.
 hydrides (TOMKINSON), A., ii, 453.
 nitrate, compound of carbamide and (BOSCH), A., i, 652.
 oxide (*lime*), vapour pressure of (RUFF and SCHMIDT), A., ii, 486.
 potash and magnesia, ratio of, in plants (LACATU), A., i, 214.
 oxides, higher (TRAUBE and SCHULZE), A., ii, 548.
 phosphate, colloidal (DE TONI), A., ii, 334.
 reactions of, with sodium carbonates (PINNOW), A., ii, 550.
 silicate, equilibrium of, with lithium silicate (SCHWARZ and HAACKER), A., ii, 452.
 sulphate, equilibrium of the reaction of ammonium carbonate with (NEUMANN and GELLENDIEN), A., ii, 537.
 equilibrium of the reaction of ammonium hydroxide with (NEUMANN and KOTYGA), A., ii, 537.
 sulphide, electrical conductivity of (VAILLANT), A., ii, 78.
 solubility of, in presence of hydrogen sulphide (RIESENFELD and FELD), A., ii, 507.
 decomposition of, by steam (RIESENFELD and HENSE), A., ii, 41.
 thiosulphate in plants (HANNEVART), A., i, 643.
Calcium organic compounds :—
 cyanamide, preparation of (KAMEYAMA), A., i, 14.
 heat changes in the formation of (DOLCH), A., ii, 17.
 character of the carbon of (KAMEYAMA), A., ii, 697.
Calcium detection, estimation, and separation :—
 detection of, in presence of barium and strontium (LUDWIG and SPIRETT), A., ii, 278.
 estimation of (WINKLER), A., ii, 359.
 estimation of, in presence of phosphates (BREAZEALE), A., ii, 132.
 estimation of, in blood (VINES), A., i, 525; (THRO and EHS), A., i, 908; (HAHN and HADJOPULOS), A., ii, 538.
 estimation of, in saline solutions (CANALS), A., ii, 349.
 estimation of, in serum (KRAMER and TISDALL), A., ii, 595.
 estimation of, in urine, blood, and faeces (TISDALL and KRAMER; LARBE and DE TONI), A., ii, 655.
 estimation of, in water (WINKLER), A., ii, 413.

- Calcium detection, estimation, and separation:**—
separation of, from barium and strontium (KOLTHOFF), A., ii, 63.
- Calcium ammonium**, action of acetylene on (HACKSPILL and BOTOLFSSEN), A., ii, 549.
- Calorimeter**, adiabatic, modifications of (SWIENTOSLAWSKI), A., ii, 379.
differential (DIXON and BALL), A., ii, 88.
- Calorimetric bombs**, enamelled, use of (MATIGNON and MARCHAL), A., ii, 379.
- Calorimetry**, animal (LANGFELDT), A., i, 754.
- Camphane**, *p*-dihydroxy- (BREDT and GOEB), A., i, 258.
- Camphane series**, studies in the (FORSTER and SAVILLE), T., 789.
- Camphene**, preparation of, from pinene derivatives (WESSON), A., i, 796.
- Camphenilonepinasone**, sodium derivative (LIPP and PADBERG), A., i, 560.
- Campholic acid**, cyano-, tolyl esters (PALFRAY), A., i, 418.
- Camphopropan- β -ol** (HALLER and RAMART-LUCAS), A., i, 673.
- Camphoquinobenzophenoneketazine** (ERRHARDT), A., i, 747.
- Camphor** (RUZICKA), A., i, 36.
preparation of (DUBOSC and LUTTRINGER), A., i, 115, 116; (LUTTRINGER), A., i, 116.
action of, on plain muscle of the leech (JOACHIMOGLU), A., i, 146.
- Camphor**, hydroxy-, derivatives of (BREDT and GOEB), A., i, 256.
- Camphor oil**, light, preparation of isoprene from (NISHIZAWA), A., i, 217.
- Camphoric acid**, methyl ester (ÖSTLING), A., i, 665.
- Camphorquinofluorenoneketazine** (ERRHARDT), A., i, 747.
- Camphoryl-1-aminonaphthyl-4-imino-camphor** (FORSTER and SAVILLE), T., 798.
- Camphorylamino phenyliminocamphor** (FORSTER and SAVILLE), T., 795.
- Camphoryl-1:4-naphthylenediamine**. See 1-Naphthylaminocamphor, 4-amino-.
- Camphoryl-*p*-phenylenediamine**. See Phenyliminocamphor, *p*-amino-.
- Canal rays**. See under Rays.
- Canavalia**, urease from (WERTER), A., i, 469.
- Caoutchouc** (*india-rubber*) from *Ficus vogelii* (ULTÉE), A., i, 428.
swelling of (PORLÉ), A., i, 428; (OSTWALD), A., i, 732.
solubility of crystalline compounds in (BRUNI), A., i, 352.
- Caoutchouc** (*india-rubber*), vulcanisation of (BRUNI; ROMANI), A., i, 575; (BRUNI and ROMANI), A., i, 734; (TWISS and THOMAS; TWISS), A., i, 876.
vulcanised, sols and gels of (STEVENS), A., i, 735.
presence and effect of manganese in (BRUNI and PELIZZOLA), A., i, 798.
action of sulphuric acid on (KIRCHHOFF), A., i, 116.
- Capillarity**, phenomena of (BECHHOLD), A., ii, 22.
- Capsella bursa pastoris**, constituents of (ZECHMEISTER and SZECSEI), A., i, 158; (BORUTTAU and CAPPENBERG), A., i, 487; (VAN URK), A., i, 488.
analysis of (GRINNE; CAPPENBERG), A., ii, 720.
- "Caput mortuum,"** origin of the term (V. LIPPMANN), A., ii, 552.
- Carbamic acid**, thio-. See Thiocarbamic acid.
- Carbamide** (*urea*), formation of, from ammonia (MATIGNON and FRAJACQUES), A., ii, 33.
preparation of (BADISCHE ANILIN- & SODA-FABRIK), A., i, 319.
synthesis of (FOSSE and LAUDE), A., i, 321, 500, 652.
by urease (MATTAAR; BARENDRECHT), A., i, 208.
action of alkali hypobromite or hypochlorite on (HUKLEY), A., i, 403.
and its substituted derivatives, action of, on alloxan and its methyl derivatives (BILTZ), A., i, 616.
compound of calcium nitrate and (BOSCH), A., i, 652.
condensation of formaldehyde and (VAN LAER), A., i, 499.
permeability of epidermal cells for (HÖFLER and SIEGLER), A., i, 642.
hydrochloride, hydrolysis of (BURNOWS), A., ii, 319.
detection of, colorimetrically (ARREGUINE and GARCIA), A., ii, 605.
See also Urea.
- Carbamide**, thio-. See Thiocarbamide.
- Carbamides**, substituted, action of ammonia and amines on (DAINS and WERTHEIM), A., i, 61.
- Carbamido-acids**, and their hydantoinis (SCOTT and COHEN), T., 664.
- o*-Carbamidobenzoic acid**, preparation of, and its acetyl and benzoyl derivatives (SCOTT and COHEN), T., 664.
- 1-Carbamido-2:5-dimethylpyrrole** (BLAISE), A., i, 193.

- Carbamido-*m*-hydroxybenzoic acids** (FROELICHER and COHEN), T., 1430.
- Carbamido-*m*-methoxybenzoic acids** (FROELICHER and COHEN), T., 1430.
- 3-Carbamidophthalic acid**, and its derivatives (SCOTT and COHEN), T., 666.
- α*-Carbamylcrotonic acid**, ethyl ester (GUPTA), T., 303.
- Carbamylidiazophenol**, dinitrocyano- (FIERZ and BRÜTSCH), A., i, 420.
- Carbamylhydroxydiazophenol**, nitrocyano- (FIERZ and BRÜTSCH), A., i, 420.
- Carbazine** (*dihydroacridine*), absorption spectra of nitro-derivatives of (KEHRMANN and GOLDSTEIN), A., i, 271.
- Carbazine colouring matters** (KEHRMANN, RAMM, and SCHMAJEWSKI), A., i, 600.
- Carbazinic acid**, dithio-, and its salts and esters (LOSANITCH), T., 763.
- Carbazole**, oxidation of (PERKIN and TUCKER), T., 216; (BRANCH and SMITH), A., i, 56.
- derivatives, detection of (BLOM), A., ii, 634.
- 4-Carbethoxylamino-*m*-hydroxybenzoic acid** (FROELICHER and COHEN), T., 1430.
- Carbethoxylamino-*m*-methoxybenzoic acids** (FROELICHER and COHEN), T., 1431.
- Carbethoxylaminophenanthridones** (KENNER and STUBBINGS), T., 601.
- 2-Carbethoxylazobenzene**, 4-nitro- (KENNER and WITHAM), T., 1056.
- 1-Carbethoxy-*o*-hydrazinobenzoic anhydride** (HELLER and JACOBSON), A., i, 441.
- Carbethoxyhydrazobenzenes**, nitro- (KENNER and WITHAM), T., 1056.
- p*-Carbethoxyphenylaminoacetic acid** (THOMS and REISERT), A., i, 344.
- 2-Carbethoxyphenylhydrazine**, 4-nitro-, and its acetyl derivative (KENNER and WITHAM), T., 1055.
- N*-Carbethoxyphthalamic acid** (HELLER and JACOBSON), A., i, 440.
- N*-Carbethoxyphthalimide** (HELLER and JACOBSON), A., i, 440.
- N*-Carbethoxysuccinamic acid** (HELLER and JACOBSON), A., i, 440.
- N*-Carbethoxysuccinimide** (HELLER and JACOBSON), A., i, 440.
- Carboanilines** (PORR), A., i, 690.
- Carbocyclic compounds**, preparation of carboxylic acids from (ROSENEMUND and STRUCK), A., i, 176.
- Carbohydrates**, photosynthesis of (BALY, HELLERON, and BARKER), T., 1025.
- influence of Schweizer's reagent on the rotation of (HESS and MESSMER), A., i, 401.
- Carbohydrates**, metabolism of. See Metabolism.
- estimation of, in vegetables and fruit (MYERS and CROLL), A., ii, 465.
- Carboligase** (NEUBERG and HIRSCH), A., i, 480.
- 4-Carboline**. See Norharman.
- 1-Carbomethoxy-*o*-hydrazinobenzoic anhydride** (HELLER and JACOBSON), A., i, 441.
- Carbon**, formation of, by the action of mercury on carbon tetrahaloids (TAMMANN), A., ii, 450.
- band spectrum of (GEHRCKE and GLASER), A., ii, 611.
- ultra-violet spark spectrum of (MILLIKAN), A., ii, 3.
- vacuum spark spectrum of (MILLIKAN, BOWER, and SAWYER), A., ii, 609.
- heat of sublimation of (KOBIN), A., ii, 302.
- fusion of (RYSCHKEWITSCH), A., ii, 258, 586, 696; (MÜNSCH), A., ii, 536.
- vapour pressure of (VAN LAAR), A., ii, 17.
- softening of (GMACHL-PAMMER), A., ii, 111.
- adsorption of iodine by (FIETH), A., ii, 382.
- velocity of diffusion of, into iron (RUNGE), A., ii, 455.
- deposition of, on contact surfaces (KOHLSCHÜTZER and NÄGELI), A., ii, 258.
- condition diagram of (VAN LIEMPT), A., ii, 429.
- and its oxides, equilibrium of, with iron and its oxides (FALCKE), A., ii, 511; (MATSUBARA), A., ii, 644.
- combustion of, with metallic oxides (BERGER and DELMAS), A., ii, 555.
- reaction of silicon with (TAMMANN), A., ii, 451.
- double bond, additive compounds formed by (KEHRMANN and ERFRENT), A., i, 318.
- tervalent, compounds containing (SCHOLL), A., i, 872.
- fixation of, in sea water (MOORE, WHITLEY, and WEBSTER), A., i, 211.
- physiological effect of inhalation of particles of (FENN), A., i, 640.
- Carbon alloys with iron** (RUECK), A., ii, 553.
- graphitisation in (HONDA and MURAKAMI), A., ii, 699.
- Carbon tetrachloride**, surface tension of (RICHARDS and CARVER), A., ii, 384.
- purification and condensations of (INCOLD and POWELL), T., 1227.

- Carbon tetrachloride**, action of sodium amalgam on (FETKENHEUER), A., ii, 547.
- tetrahaloids**, action of mercury vapour on (TAMMANN), A., ii, 450.
- monoxide (carbonic oxide)**, preparation of (MULLER and PEYTRAL), A., i, 156; (HURTLEY), A., i, 403.
- pure, preparation of, apparatus for (WARAN), A., ii, 546.
- absorption of, by cuprous ammonium carbonate (HAINSWORTH and TYRUS), A., ii, 259.
- combustion of (v. WARTENBERG and SIEG), A., ii, 107.
- explosion of air and (BONE and HAWARD), A., ii, 628.
- oxidation of (RAY and ANDEREGG), A., ii, 450.
- action of hydrogen and, with metallic oxides (CHAUDRON), A., ii, 584.
- action of hydrogen chloride and, on aromatic hydrocarbons in presence of catalysts (KONCZYNSKI and MROZINSKI), A., i, 567.
- action of iron oxides with (CHAUDRON), A., ii, 178.
- constitution of mercury derivatives of (MANCROT), A., i, 329.
- reagent for fixation of (DESGREZ, GUILLERMARD, and HEMMERDINGER), A., ii, 547.
- respiration during asphyxia by (HAGGARD and HENDERSON), A., i, 752.
- detection of (HOOVER), A., ii, 654.
- estimation of small amounts of (FLORENTIN and VANDENBERGHE), A., ii, 276.
- estimation of, in blood (NICLOUX), A., i, 204; ii, 594.
- dioxide in water of the Gulf of Mexico (WELLS), A., ii, 260.
- vacuum spectrum of (BAIR), A., ii, 362.
- ratio of the specific heats of air and (PARTINGTON), A., ii, 621.
- liquid, total heat of (JENKIN and SHORTHORSE), A., ii, 485.
- adsorption of, by haemoglobin (BUCKMASTER), A., i, 632.
- solid, binary equilibria with (THIEL and SCHULTE), A., ii, 178.
- reaction between iron sulphide and (GOLDSCHMIDT), A., ii, 553.
- similarity in molecular structure of nitrous oxide and (BANKINE), A., ii, 192.
- absorption of, by plants, and its value as a fertiliser (FRENKEL), A., i, 703.
- Carbon dioxide**, assimilation of, by plants (MAZE), A., i, 151, 203; (ROUGE), A., i, 911.
- distribution of, in corpuscles and plasma of blood (JOFFE and POULTON; CAMPBELL and POULTON), A., i, 141; (MELLANDY and THOMAS), A., i, 142; (SMITH, MEANS, and WOODWELL), A., i, 474.
- variations in absorption and alveolar pressure of (DODDS), A., i, 284.
- alveolar tension of (LOER), A., i, 378.
- estimation of, in air (FREUND), A., ii, 348.
- estimation of, in carbonates (KOHEN), A., ii, 710.
- Carbonic acid**, active, estimation of, in water (MASSINK; KOLTHOFF), A., ii, 59.
- Carbonates**, crystallisation of (LEITMERER), A., ii, 112.
- estimation of, in soda-lime glass (IKAWA), A., ii, 706.
- estimation of carbon dioxide in (KOHEN), A., ii, 710.
- Carbon estimation**:—
- estimation of, in aluminium (SONDAL), A., ii, 654.
- total and graphic, estimation of, in iron alloys (WENGER and TRAMPLER), A., ii, 519.
- Carbonyl compounds**, mechanism of reaction of (LAIWORTH), A., ii, 543.
- condensation of, with resorcinol or phloroglucinol (v. EULER), A., i, 563.
- γ -Carboxyglutamic acid**, α -cyano-, ethyl ester, and its metallic derivatives (INGOLD and PERREN), T., 1594.
- 2-Carboxyindole-3-acetic acid**, and its derivatives (KERMACK, PERKIN, and ROBINSON), T., 1622.
- Carboxymethanetriacetic acid**, preparation of, and its salts and derivatives (INGOLD and POWELL), T., 1869.
- β -Carboxy- ζ -methyl- Δ^8 -heptadiene- ϵ -acetic acid**, and its esters (RUCICKA and TREBLE), A., i, 83.
- 2-Carboxy-5-methylmandelic acid**, 3-hydroxy- (SCHLEUSSNER and VOSWINCKEL), A., i, 112.
- α' -Carboxy- ω' -methylmethanetriacetic acid**, α -cyano-, ethyl ester (INGOLD and PERREN), T., 1599.
- 9- α -Carboxyphenylamino-9:10 dihydroanthracene** (BARNETT and COOK), T., 910.
- p-Carboxyphenylaminomethylenesulphoxylic acid**, sodium salt (BINZ and HOLZAPFEL), A., i, 31.

- 5-Carboxy-m-tolylacetic acid**, 6-hydroxy-, and its silver salt (ALIMCHANDANI and MELDRUM), T., 209.
- 4-Carboxy-m-tolylethyl alcohol**, *βββ*-tri-chloro- α -5-hydroxy-. See 4-Methyl-2-tri- β -chloro- α -hydroxyethylbenzoic acid, 6-hydroxy-.
- p-Carbylaminoazobenzene**, and its derivatives (PASSERINI), A., i, 197, 743.
- Carnitine**, and its aurichloride (ENGLAND), A., i, 880.
- apoCarnitine**, and its salts (ENGLAND), A., i, 880.
- Carnosine**, and its derivatives (SMORODINOV), A., i, 192.
- estimation of, colorimetrically (CLIFFORD), A., ii, 604.
- Caronic acid**. See 1:1-Dimethylcyclopropane-2:3-dicarboxylic acid.
- Caronimide** (BIRCH, GOUGH, and KON), T., 1322.
- Carotin**. See Carotene.
- Carotinoids**, relation of, to growth and reproduction of albino rats (PALMER and KENNEDY), A., i, 526.
- Carrageen**. See *Chondrus crispus*.
- Carotene**, from Crustaceae, and its oxidation (VERNE), A., i, 77.
- Carrots**, vitamins in (STEPHENSON), A., i, 484.
- Carvacrol**, preparation of urethanes of (SHERK), A., i, 239, 340.
- Casein**. See Caseinogen.
- Caseinogen**, chemical and physical properties of solutions of (LOEB), A., i, 367.
- viscosity of solutions of (ZOLLER), A., i, 625.
- hydrolysis of (ONSLow), A., i, 693.
- digestion of, by trypsin (EDIE), A., i, 750.
- Cassiterite**, estimation of tin in (CORTI), A., ii, 416.
- Castor oil**, hardened, hydroxystearic acid from (THOMS and DECKERT), A., i, 219.
- Catalase** from fat, decomposition of hydrogen peroxide by (NORDEFELDT), A., ii, 36.
- reaction of (MORGULIS), A., i, 751.
- apparatus for estimation of (MACHENS and CORDEN, SCHWEIZER), A., ii, 227.
- Catalysis** (JOHNSON and BROWN), A., i, 806; (DHAR, DATTA, and BHATTACHARYA), A., ii, 36; (DHAR), A., ii, 37, 391; (GUICHARD), A., ii, 390; (MAILHE and DE GODOIN), A., ii, 391; (BÜSEKENS), A., ii, 500.
- studies on (ABEL), A., ii, 35.
- relation between degree of dispersion and (MADINAVEITIA and AGUIRRECHE), A., ii, 390.
- Catalysis by kations** (HOLMBERG), A., ii, 319.
- function of protective colloids in (IDE-DALE), T., 109.
- at solid surfaces (ARMSTRONG and HILDITCH), A., ii, 582.
- heterogeneous, and adsorption (KREUT and VAN DUIN), A., ii, 392.
- Catalysts**, influencing of the activity of (ROSENMUND and ZETZSCHE), A., ii, 320, 393, 631; (ROSENMUND, ZETZSCHE, and HEISE), A., ii, 392, 631; (ABEL), A., ii, 542.
- surface area and specificity of (ARMSTRONG and HILDITCH), A., ii, 582.
- use of metallic salts as, in organic reactions (KORCZYŃSKI), A., ii, 445.
- influence of, on the chlorination of benzene (SILBERRAD), T., 2029.
- Catalytic hydrogenation** (NUTHER), A., ii, 391.
- by means of copper (SABATIER and KUBOTA), A., i, 847.
- of aromatic compounds by means of platinum (WILLSTATTER and WALDSCHMIDT-LEITZ), A., i, 667; ii, 185.
- of organic compounds (KELDER), A., ii, 630, 688.
- power of colloids, variations in (MADINAVEITIA and AGUIRRECHE; ROSASOLANO), A., ii, 390.
- Catechin**, chemistry and isomerism of (FREUDENBERG, BÖHME, and BRENDORF), A., i, 576; (FREUDENBERG), A., i, 577.
- constitution of (NIERENSTEIN), T., 164.
- Catechol**, 3-amino-, hydrochloride (HEX-RICH and WUNDER), A., i, 888.
- Cathode rays**. See under Rays.
- Cathodes**, mercury, overvoltage at (FRY-NILL), T., 1081.
- silver, removal of copper from, by means of trichloroacetic acid (DOUGHTY and FREEMAN), A., ii, 414.
- Cat-tail**. See *Typha latifolia*.
- Cedar oil**, Japanese, constituents of (SHIMIZAWA), A., i, 258.
- Cell or Cells**, electrochemical, depolarisation in, by light (BAUR), A., ii, 236.
- for measuring conductivity (RICE), A., ii, 78.
- iodine-silver, electromotive force of (GERTH), A., ii, 534.
- oxy-hydrogen gas (BAUR), A., ii, 374.
- potassium chloride calomel (FAIR and MUDGE), A., ii, 79.

- Cell or Cells, electrochemical, standard Weston, stability of (JAEGER and v. STEINWEHR), A., ii, 372.
thermodynamics of (COHEN and WOLTERS; COHEN, HELDERMAN, and MOESVELD), A., ii, 155; (COHEN, KRUISHEER, and MOESVELD), A., ii, 158.
- Cell or Cells, photochemical, (LIFSCHITZ and JOFFE), A., ii, 365.
- Cell or Cells, photo-electric, use of (v. HALBAN and GEIGEL), A., ii, 145.
- Cell or Cells, physiological, action of light on (NOACK), A., i, 910.
effect of radium emanation on the function of (ENGELMANN), A., i, 526.
- adsorption of ions by (GRAY), A., i, 145.
selective absorption of potassium by (MITCHELL and WILSON), A., i, 830.
distribution of sodium salts in (FUNKO), A., i, 907.
autoxidisable substance in (HOPKINS), A., i, 635.
respiration of (LIFSCHITZ), A., i, 203.
- Cellobial hexa-acetates (BERGMANN and SCHOTTE), A., i, 649.
- Cellobiose, constitution of (KARRER and WIDMER), A., i, 397; (BERGMANN), A., i, 707; (v. EULER), A., i, 769.
and its acetate (HAWORTH and HIRST), T., 193.
- Cellose. See Cellobiose.
- Celloxyl-glucosyl selenide and sulphide and their hendeca-acetates (WREDE), A., i, 162.
- Cellulose (FREUDENBERG), A., i, 400; (HESS and MESSMER), A., i, 401; (HESS, WITTELSBACH, and MESSMER), A., i, 710; (KARRER and WIDMER), A., i, 771.
from lichens and yeast (SALKOWSKI), A., i, 499.
constitution of (HESS), A., i, 12; (KARRER and WIDMER), A., i, 310; (v. EULER), A., i, 769.
action of Röntgen rays on (HERZOG and JANCKE), A., i, 308.
solubility and dispersion of, in solutions of alkali and alkaline earth salts (HERZOG and BECK), A., i, 97; (v. WEIMARN), A., i, 847.
adsorption of alkalis by (KOLTHOFF), A., ii, 213.
action of dilute acids on (WOHL and BLEUMICH), A., i, 164.
action of chlorosulphur chlorides on (BARNETT), A., i, 847.
dextrins from (SAMEC and MATULA), A., i, 397.
- Cellulose, hydrolysis of (KAUKO), A., i, 771.
methylation of (DENHAM), T., 77.
cotton, hydrolysis of (MONIER-WILLIAMS), T., 803.
wood (LENZE, PREUS, and MÜLLER), A., i, 163; (HEUSER and BOEDECKER), A., i, 709.
action of sodium hydroxide on (HARDING), A., i, 402.
content of, in spruce wood (KLASON), A., i, 840.
and its esters (DUCLAUX), A., i, 545.
estimation of lignin in (HEUSER and WENZEL), A., ii, 715.
- Cellulose acetate, preparation of (BARNETT), A., i, 164.
swelling of (KNOEVENAGEL and EBERSTADT), A., i, 402; (KNOEVENAGEL and MOTZ), A., i, 709; (KNOEVENAGEL and BREGENZER), A., i, 709, 710; (KNOEVENAGEL and BREGENZER), A., i, 771.
viscosity of (v. FISCHER), A., i, 848.
action of hydrazines on (BARNETT), A., i, 308.
glycolates, and their derivatives (BARNETT), A., i, 847.
nitrates, stability of (DUCLAUX), A., i, 545; (FRIC), A., i, 650.
- Cephalorachidien fluid, estimation of dextrose in (IONESCU and VARGOLICI), A., ii, 220.
- Cerebro-spinal fluid, congo-rubin test for colloids in (LÜERS), A., i, 75.
- Cerevisin (THOMAS), A., i, 292.
- Cerium alloys with iron and with zinc (CLOTOPSKI), A., ii, 203.
- Cerium salts, electrolysis of aqueous solutions of (SCHWITZ), A., ii, 589.
- Ceric sulphate, oxidising action of (BENRATH and RULAND), A., ii, 204.
- Cerium minerals from Sweden (GEIJER), A., ii, 702.
- Cesarolite (BUTTGEBACH and GILLET), A., ii, 406.
- Cetraria islandica*, cellulose from (SALKOWSKI), A., i, 499.
- Chalcantite group, minerals of the (LARSEN and GLENN), A., ii, 54.
- Chalcopyrite, formation of (YOUNG and MOORE), A., ii, 120.
- Chalkacene (DZIERWOSKI, PODGÓRSKA, LEMBERGER and SZUSKA), A., i, 105.
- Charcoal, adsorption by (FIRTH), T., 926; A., ii, 382; (ABDERHALDEN and FODOR), A., ii, 21; (WIEGNER, MAGASANIK, and VIRTANEN), A., ii, 244; (HORST), A., ii, 245; (KOLTHOFF), A., ii, 383.

- Charcoal**, adsorption of alkali and alkaline earth salts by (ODÉN and ANDERSSON), A., ii, 438.
 adsorption of gases by (SHELDON), A., ii, 88; (BRIGGS), A., ii, 624.
 animal, adsorption by (HARTLEBEN; MOELLER), A., ii, 304.
 adsorption of water and alcohol by (DRIVER and FIRTH), T., 1126.
 wood, adsorption of benzene by, alone, and from iodine solution (BAER and KING), T., 454.
 negative adsorption of alkali haloids by (PICKLES), T., 1278.
 preparation of colloids by oxidation of (HOFMANN and FREYER), A., i, 8.
- Chaulmoogra oil**, fractionation of (WREN-SHALL), A., i, 91.
- Chelerythrine** (KARRER), A., i, 801.
- Chelidonic acid**, occurrence of, in plants (STRANSKY), A., i, 85; (v. LIEPMANN), A., i, 86.
- Chelidonic acid**, bromo-, ethyl ester (THOMS and PIETRULLA), A., i, 264.
- Chemical compounds**, independent variables in a system of (WALD), A., ii, 440.
 constants, calculation of (HENGLEIN), A., ii, 163; (YAMAZAKI), A., ii, 574.
 constitution and optical rotation (B. K. and M. SINGH and LAL), T., 1971; (BETTI and CAPACCIOLI; BERLINGOZZI), A., i, 107.
 influence of, on the rotatory dispersion of optically active compounds (RUPE, KRETHLOW, and LANGBEIN), A., ii, 473.
 and thermal properties of binary mixtures (PASCAL), A., ii, 574.
 and crystallography of organic compounds (SCHLEICHER), A., ii, 25.
 and colour (KEHRMANN and SANDOZ), A., i, 276; (MOIR), A., ii, 6, 365, 475; (KEHRMANN), A., ii, 476.
 relation between odour and (TSCHIRCH), A., i, 755.
 influence of, on reactivity (GUPTA), T., 298.
 relation between resinification and (HERZOG), A., i, 519.
 energy. See Energy.
 reactions, influence of the solvent on the temperature-coefficient of (COX), T., 112.
 influence of substitution on (FRANZEN and ROSENBERG), A., i, 233; (FRANZEN and ENGEL), A., i, 713.
 non-mechanical nature of (POLÁNYI), A., ii, 179.
 simultaneous, of the same probability (SCHEFFER), A., ii, 540.
- Chemical reactivity**, theory of (DRSEMAN), A., ii, 315.
 statics, law of, deduction of, from the theorem of virtual work (ARIANO), A., ii, 580.
- Chemistry and statistical mechanics** (ADAMS), A., ii, 628.
- Chenopodium oil**, constituents of (HENRY and PAGET), T., 1714; (ROURE-BERTRAND FILS), A., i, 797.
- Chestnut**, edible, tannins from (FREUDENBERG and WALFUSKI), A., i, 799.
- China**, metallurgy and history of chemistry in (WANG), A., ii, 39.
- "Chinosol"**, detection of, microchemically (GRIEBEL), A., ii, 696.
- Chitosan**, microchemistry of, and its derivatives (BRUNSWICK), A., i, 259.
- Chloral**, condensation of cresotic and gallic acids with (ALIMCHANDANI and MELDREM), T., 201.
 hydrate, condensation of benzene with, in presence of aluminium chloride (VAN LAER), A., i, 503.
 action of hydrazine on (KNÖPPER), A., i, 158.
 action of metallic oxides on (KINZ-KRAUSE and MANICKER), A., i, 543.
- Chloral- β -isobutylidenehydrazone** (KNÖPPER), A., i, 160.
- Chloralcolloidine**. See 3-Ethyl-4-g-hydroxy- $\gamma\gamma\gamma$ -trichloro- α -propylpyridine.
- Chloraloxime**, action of, on aromatic amines (MARTINET and COUSSET), A., i, 516.
- Chloral α isopropylidenehydrazone** (KNÖPPER), A., i, 160.
- Chloralsemioxamazone** (KNÖPPER), A., i, 159.
- Chlorates**. See under Chlorine.
- Chlorides**. See under Chlorine.
- Chlorine**, atomic weight of, from minerals (CURIE), A., ii, 396.
 spectra of (KIMURA and FUKUDA), A., ii, 140.
 spectra of isotopes of (KRATZER), A., ii, 140, 361.
 photochemical reaction of hydrogen with (BALY and BARKEE), T., 653.
 photochemical reaction between trichlorobromomethane and (NOB-DACK), A., ii, 568; (v. RANKE), A., ii, 580.
 overvoltage during liberation of (NEWBURY), T., 477.
 action of ammonia with (NOYES and HAW; NOYES), A., ii, 42.
 treatment of water with (CLARK and ISELEY), A., ii, 94.

- Chlorine**, presence of, in animal tissues (DAMIENS), A., i, 77.
 in blood (FALTA and RICHTER-QUITTNER), A., i, 330.
 in serum and plasma (RUSZYŃSK), A., i, 73.
- Chlorine heptoxide**, preparation of (MEYER and KESSLER), A., ii, 326.
- Hydrochloric acid**, infra-red absorption spectrum of (IMES), A., ii, 5.
 density of (KING), A., ii, 326.
 absorption of, by chloroform (WILLIAMS), A., ii, 195.
 equilibrium of gelatin with (WINTGEN and KRÜGER), A., ii, 247.
 action of carbon monoxide and, on aromatic hydrocarbons in presence of catalysts (KORCZYŃSKI and MROZIŃSKI), A., i, 567.
 detection of, in presence of hydrobromic and hydriodic acids (LONGINESCU and CHABORSKI), A., ii, 410.
- Chlorides**, crystallisation of mixtures of (LIEBISCH and VORTISCH), A., ii, 262.
 dialysis of solutions of, against serum (MESTREZAT and LEDENT), A., i, 634.
 in serum of sucklings (SCHEER), A., i, 905.
 estimation of (RUSZYŃSK; SMITH; WHITEBORN; AUSTIN and VAN SLYKE; BELL and DOIST), A., ii, 272.
 estimation of, electrometrically (HENDRIXSON), A., ii, 651.
 estimation of, in blood (WETMORE), A., ii, 126.
 estimation of, in soda-lime glass (IKAWA), A., ii, 706.
- Chlorates**, electrochemical preparation of (KNIBBS and PALFREEMAN), A., ii, 396.
 influence of chlorides on solubility of (BILITER), A., ii, 40.
- Hypochlorous acid**, estimation of, electro-volumetrically (TREADWELL), A., ii, 410.
- Hypochlorites**, estimation of, gasometrically (MACBETH), A., ii, 461.
- Perchloric acid** as a dehydrating agent in estimation of silica (WILLARD and CAKE), A., ii, 60.
- Perchlorates**, electrochemical preparation of (KNIBBS and PALFREEMAN), A., ii, 396.
- Chlorine detection and estimation** :—
 detection of, in atmospheric air (MATIGNON), A., ii, 272.
 detection of, in presence of iodine (LUDWIG), A., ii, 273.
- Chlorine detection and estimation** :—
 estimation of, by the lamp method (BOWMAN), A., ii, 706.
 estimation of, in organic compounds (WEITZEL), A., ii, 591.
 estimation of, in plant products (GRÉGOIRE and CARPIAUX), A., ii, 461.
- Chlorites**, chromium-bearing (SHANNON), A., ii, 459.
- Chloroform**, preparation of, from ethyl alcohol (OCHI), A., i, 293.
 surface tension of (RICHARDS and CARVER), A., ii, 384.
 equilibrium of, with benzene (SCHULZE), A., ii, 388.
 action of phenylhydrazine on (EARNETT), A., i, 692.
 estimation of, volumetrically (SASSE), A., ii, 218.
- Chlorophyll**, formation of acetaldehyde from, in presence of sunlight (OSTERHOFF), A., i, 263.
- Chloropieria**, preparation of (ORTON and MCKIE), T., 29.
 action of light on solutions of (PIUTTI), A., i, 298.
 solubility of, in water (THOMPSON and BLACK), A., i, 3.
- Chlorotriamminotetrasulfatocobalt**. See under Cobalt.
- β -Cholanedionecarboxylic acid**, and its derivatives (BORSCHÉ and WIECKHORST), A., i, 729.
- iso- α -Cholanetricarboxylic acid**, and its trimethyl ester (BORSCHÉ and BEHR), A., i, 729.
- β -Cholanonetricarboxylic acid**, derivatives of (BORSCHÉ and WIECKHORST), A., i, 729.
- Cholenic acid** (WIELAND and WEYLAND), A., i, 178.
- α - and β -Cholestan-7-ones**, 4-chloro-, and their derivatives (WINDAUS and V. STADEN), A., i, 507.
- Cholesterol** (WINDAUS and V. STADEN), A., i, 507.
 and its esters in blood during absorption (KNUDSON), A., i, 474.
 partition of, between corpuscles and plasma (RICHTER-QUITTNER), A., i, 285.
 in milk (WACKER and BECK), A., i, 639.
 decomposition products of (STEINKOPF, WINTERNITZ, ROEDERER and WOLYŃSKI), A., i, 24.
 d-bromide, action of alcoholic sodium acetate solution on (LIFSCHÜTZ), A., i, 25.
 detection of (GALAVIELLE, PORTES, and CRISTOL), A., ii, 525.

- Cholesterol**, estimation of, and allied substances (GARDNER and WILLIAMS), A., ii, 563.
 estimation of, colorimetrically (GARDNER and FOX), A., ii, 563.
 estimation of, in blood (FEIGL), A., ii, 220.
- Cholesterolanæmia** (FEIGL), A., ii, 220.
- Cholic acid**, methyl ester (RIEDEL), A., i, 540.
- apoCholic acid** (RIEDEL), A., i, 540.
 isomeride of, and its derivatives (BODECKER and VOLK), A., i, 865.
- Choline**, crystalline, preparation of (DUDLEY), T., 1260.
- Cholines**, preparation of, from amino-acids (P. and W. KARRER, THOMANN, HONIGACHER, and MÄDER), A., i, 228.
- Choloidanic acid**, and its pentamethyl ester (WIELAND), A., i, 113.
- ψ-Choloidanic acid**, and its tetramethyl ester (WIELAND), A., i, 113.
- Chondridin**, structure of (LEVENE and LÓPEZ-SUÁREZ), A., i, 230.
- Chondrus crispus** (carrageen), constituents of (HAAAS), A., i, 839.
- "Chromæones"** (DZIEWOŃSKI, PODGÓRSKA, LEMBERGER, and SUSZKA), A., i, 106.
- Chrome alum**, action of sodium carbonate on solutions of (MEUNIER), A., ii, 405; (MEUNIER and CASTE), A., ii, 512.
- Chromic acid**. See under Chromium.
- Chromium**, arc spectra of (KIESS and MEGGERS), A., ii, 4.
 precipitation of, with zinc (YASUI), A., ii, 216.
 carrying down of lime and magnesia in precipitation of (TOPORESČU), A., ii, 353.
- Chromium alloys** with iron and nickel (CHEVENARD), A., ii, 336.
- Chromium compounds**, reduction of (WEBER), A., ii, 645.
- Chromium hydroxide**, separation of, from aluminium and ferric hydroxides (MME. M. and M. LE-MARCHANDS), A., ii, 351.
- Dichlorochromic chlorides**, hydrolysis of (LAMB and FONDA), A., ii, 444.
- Hexa-aquochromic chlorides**, hydrolysis of (LAMB and FONDA), A., ii, 444.
- Chromic acid**, effect of chlorides on the electrolysis of (LIEBREICH), A., ii, 678.
 estimation of, isometrically (KOLTHOFF), A., ii, 219.
- Dichromates**, estimation of, electrometrically (HENDRIXSON), A., ii, 651.
- Chromium:**—
- Dichromates**, estimation of, volumetrically, in mixtures with permanganates and chromic salts (CHATTERJI), A., ii, 713.
- Chromic salts**, estimation of, volumetrically, in mixtures with permanganates and dichromates (CHATTERJI), A., ii, 713.
- Chromium organic compounds** (BENNETT and TURNER), A., i, 472.
 pentaphenyl hydroxide, and its derivatives (HEIN), A., i, 826.
- Chromium detection, estimation, and separation:**—
 detection of, microchemically, with sodium salicylate (VAN ZIIP), A., ii, 463.
 detection of, and its separation from uranium and vanadium (BROWNING), A., ii, 279.
 estimation of, iodometrically, in chromite (LITTLE and COSTA), A., ii, 352.
 estimation of, in steel (EVANS), A., ii, 279, 562.
- Chromohercynite** from Madagascar (LACROIX), A., ii, 53.
- Chromones**, 6- and 8-chloro- and their 2-carboxylic acids (RUHEMANN), A., i, 430.
- Chromophores**, function of (LIFSCHITZ and ROSENBOHM), A., ii, 286; (LIFSCHITZ), A., ii, 287.
- Chrysalis oil**, constituents of (KAWASE, SUDA and FUKUZAWA), A., i, 699.
- Chrysoidine**, nitro- (KORCZYŃSKI and PIASECKI), A., i, 518.
- Chymosin**. See Rennin.
- Cinchona alkaloids** (RADE and JANTZEN), A., i, 438; (GIEMSA and HALBERKANN), A., i, 581, 583.
 syntheses of derivatives of (JACOB and HEIDELBERGER), A., i, 44.
 hydrogenated, containing selenium (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 267.
 preparation of amino-compounds of (BOEHRINGER and SOHSE), A., i, 515.
- Cinchotoxol** (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 355.
- Cinnamic acid**, halogenohydrins of, and their derivatives (READ and ANDREWS), T., 1774.
 o-chloro-, ethyl ester (v. AUWERS and FÜCHLING), A., ii, 230.
 chlorobromo-derivatives, and their salts and esters (REICH, ARATA, POTOK, and TEMPEL), A., i, 27.

- Cinnamic acids, halogenated, esters, relation between configuration and physical properties of (V. AUWERS and SCHMELLENKAMP), A., i, 417.
- Cinnamon oil (ROUVE-BERTRAND FILS), A., i, 798.
- Cinnamoylamino-1:1'-dimethylisocyanine iodides (HAMER), T., 1440.
- Cinnamoylaminoquinaldines, and their salts (HAMER), T., 1437.
- Cinnamoylaminoquinolines, and their salts (HAMER), T., 1437.
- Cinnamyl- β -p-aminobenzoyloxyethyl-ethylamine, and its derivatives (v. BRAUN and BRAUNSDORF), A., i, 773.
- Cinnamylethylamine, and its salts (v. BRAUN and BRAUNSDORF), A., i, 773.
- Cinnamylethyl- β -hydroxyethylamine, and its derivatives (v. BRAUN and BRAUNSDORF), A., i, 773.
- Cinnamylidene-p-acetylaminacetophenone, and its tetrabromide (GIUA and BAGIELLA), A., i, 731.
- p-Cinnamylideneaminacetophenone (GIUA and BAGIELLA), A., i, 731.
- Cinnamylidenebisphenylacetamide (GUPTA), T., 301.
- 9-Cinnamylidenefluorene, 2:7-dichloro- (SIEGLITZ and SCHATZKE), A., i, 782.
- p-Cinnamylidenehydrazinobenzoic acid, ethyl ester (THOMS and RITSERT), A., i, 344.
- Odus lodaniferus* and *monspeliensis*, analytical characters of the oils from (ROUVE-BERTRAND FILS), A., i, 798.
- is-Citraconatodiethylenediaminecobaltic hydrogen citrate (DUFF), T., 339.
- itraconic anhydride, fluoran derivative of (KRISHNA and POPE), T., 291.
- itric series, optical determination of the constitution of compounds of the (KNOEVENAGEL and OELBERMANN), A., i, 865.
- itric acid, salts, physiological action of (HARA), A., i, 478.
- ammonium salt, action of, with alkaline earth sulphates (TEODOSIĆ), A., i, 540.
- behaviour of, with phosphates (PAT- TEN and MAINS), A., ii, 214.
- cupric ammonium salt, conductivities of solutions of copper sulphate and of (DE LENAIZAN and MAURY), A., ii, 534.
- detection of (POLOSOVSKI), A., ii, 601.
- ironellal, estimation of (BENNETT), A., ii, 717.
- ironellol, estimation of (PFAU), A., ii, 609; (BENNETT), A., ii, 717.
- regulation, adsorption by (DEZEINE), A., ii, 88.
- Coal, origin and structure of (JASON), A., ii, 554.
- formation and chemical structure of (FISCHER and SCHRADER), A., ii, 210.
- structure of (MARCUSSEON), A., ii, 590.
- determination of the volatile matter from (BONE and SILVER), T., 1145.
- estimation of the degree of oxidation of (CHARPY and DECORPS), A., ii, 709.
- Coal gas, explosion of inflammable mixtures of air and (DAVID), A., ii, 85, 687.
- estimation of benzene hydrocarbons in (BERL, ANDRESS and MÜLLER), A., ii, 354.
- Coal-tar oil, detection and estimation of, in turpentine (GROTLISCH and SMITH), A., ii, 659.
- Cobalt, ultra-violet spark spectrum of (L. and E. BLOCH), A., ii, 286.
- valency scale of (WÖHLER and BALZ), A., ii, 638.
- Cobalt bases (*cobaltamines*), complex (DUFF), T., 1982.
- volume relationships and heat of decomposition of (CLARK, QUICK, and HARRIS), A., ii, 116.
- stereochemistry of salts of (MATSUNO), A., ii, 614.
- coagulation of arsenious sulphide sols by (MATSUNO), A., ii, 637.
- polyiodides of (EPHRAIM and MOSIMANN), A., ii, 339.
- Carbonatotetramminocobalt-bismuth and -mercury iodides (EPHRAIM and MOSIMANN), A., ii, 340.
- Chlorotriaminotetrasilicocobalt (SCHWAB and BAUSCH), A., ii, 404.
- Decammine cobaltous chloride (CLARK, QUICK, and HARRIS), A., ii, 116.
- Hexamminocobalt-bismuth and -mercury iodides (EPHRAIM and MOSIMANN), A., ii, 340.
- Pentamminocobaltbismuth iodide, chloro- (EPHRAIM and MOSIMANN), A., ii, 340.
- Silicotetramminocobalt salts (SCHWAB and BAUSCH), A., ii, 404.
- Tetramminocobalt-bismuth and -mercury iodides, dinitro- (EPHRAIM and MOSIMANN), A., ii, 340.
- Cobalt salts, specific gravity and molecular volume of (CLARK, QUICK, and HARRIS), A., ii, 116.
- Cobalt fluoride, chemistry and crystallography of (EDMINSTER and COOPER), A., ii, 115.
- sulphate, hydrates of (LARSEN and GLENN), A., ii, 54.

- Cobalt organic compounds**, complex (WERNER, SCHWYZER, and KARRER), A., i, 224.
 with allylamine (PIERONI), A., i, 315.
- Cobalt detection, estimation, and separation**:—
 detection of (VAN KLOOSTER), A., ii, 415; (VAUBEL), A., ii, 596; (BALAREFF), A., ii, 712.
 detection and estimation of (MATSUI and NAKAZAWA), A., ii, 219; (BRALEY and HOBART), A., ii, 352.
 estimation of, electrolytically (WAGENMANN), A., ii, 658.
 estimation of, in cobalt steel (LUNDELL and HOFFMANN), A., ii, 561.
 separation of nickel and (WHITBY and BEARIWOOD), A., ii, 562.
- Cobalt lakes** with quinonoximes, constitution of (MORGAN and SMITH), T., 704.
- Cobalt minerals** from Katanga (SCHOEF), A., ii, 649.
- Cobalt steel**, estimation of cobalt and nickel in (LUNDELL and HOFFMANN), A., ii, 561.
- Cobaltimalonic acid**, potassium salt (THOMAS), T., 1140.
- Cocaine**, influence of the reactions of solutions of, on their activity (RIFFEL), A., i, 123.
- p-Coccinic acid**, synthesis of, and its derivatives (SCHLEUSSNER and VOSWINCKEL), A., i, 111.
- Cochenillic acid**, attempt to synthesise (SCHLEUSSNER and VOSWINCKEL), A., i, 111.
- Cocoa**, estimation of theobromine in (WADSWORTH), A., ii, 225.
- Cocunut**. See *Cocos nucifera*.
- Cocos nucifera* (coconut), constituents of the globulin of (JOHNS and JONES), A., i, 65, 66.
- Codeine**, reduction products of (MANICH and LÖWENHEIM), A., i, 124.
 compound of phenylethylbarbituric acid with (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 354.
- Codeinecarboxylic acid**, ethyl ester, and its hydrogen tartrate (GADAMER and KNOCH), A., i, 581.
- Coffee**, estimation of caffeine in (UGARTE), A., ii, 470.
- Cohun nut**. See *Attalea cohune*.
- "Colcothar,"** origin of the term (v. LIPPMANN), A., ii, 553.
- Colloids**, preparation of, by oxidation of charcoal (HOFFMANN and FREYER), A., i, 8.
 structure of (PAULI), A., ii, 246.
 chemistry of (STIEGLER), A., ii, 577.
- Colloids**, photometric study of (SHEPPARD and ELLIOTT), A., ii, 310.
 electrical properties and peptisation of (VARGA), A., ii, 371.
 apparatus for determination of the migration velocity of (STENGMANN), A., ii, 13.
 charges on the surfaces of (WILLIAMS), A., ii, 13.
 effect of ions on the condition of (MICHAELIS and TIMÉNEZ-DÍAZ), A., ii, 682.
 effect of, on the reactions at electrodes (ISGARISCHEV), A., ii, 620.
 viscosity of (ALEXANDER), A., ii, 310.
 adsorption of electrolytes by (MUTSCHALLER), A., ii, 20.
 dispersion of, in hydrosols (TIAN), A., ii, 439, 440.
 coagulation of (KLEIN; v. HAHN), A., ii, 684.
 precipitation and coagulation of, by electrolytes (SEKERA), A., ii, 31.
 swelling of (HANDOVSKY and WEN), A., ii, 92; (LÜERS and SCHNEIDER), A., ii, 175.
 "gilding" of amicroons of (BORJESON), A., ii, 27.
 action of salts of rare earths on (DOERR), A., ii, 92.
 variations in the catalytic power of (MADINAVEITIA and AGUIRREBE; ROCASOLANO), A., ii, 390.
 influence of, on the velocity of reactions involving gases (FINDLAY and THOMAS), T., 170.
 organic, action of metallic salts on (SCALA), A., i, 287.
 protective (GUTHRIE and BECKMANN), A., ii, 312; (GUTHRIE, HIER, and HAUG), A., ii, 537, 538.
 function of, in catalysis (IREDALE, T., 109.
 soaps as (IREDALE), T., 625.
 in plants (SAMEC and HAERDTL), A., i, 226; (SAMEC and MATULA), A., i, 397; (SAMEC and MEYER), A., i, 400, 707.
 detection of, in cerebro-spinal fluid (LÜERS), A., i, 75.
- Colloidal colouring matters**. See Colouring matters.
- condition of sparingly soluble substances in solution (TRAUBE and KLEIN), A., ii, 683.
 metals, effect of, on lower plant and animal organisms (v. PLOTOW), A., i, 82.
 particles, size of, in a Brownian motion (ARAKATSU and FUKUDA), A., ii, 175.

- Colloidal particles, reciprocal attraction of (FRICKE), A., ii, 387.
 solutions, apparatus for preparation of (PLATON), A., ii, 627.
 refraction of (WINTGEN), A., ii, 137.
 dielectric constants of (KELLER), A., ii, 682.
 effect of electrolytes on the stability of (KRUYT), A., ii, 577.
 interfacial and surface tensions of (REYNOLDS), T., 471.
 dispersoid, coagulation of (YANEK), A., ii, 533.
 coagulation of, by electrolytes (BUNTON and BISHOP), A., ii, 176.
 chemical reactions in mixtures of (FREUNDLICH and NATHANSON), A., ii, 536.
 suspensions, viscosity and flocculation of (EXNER), A., ii, 382.
Colophenic acid (FAHRION), A., i, 792.
Colophony, constituents of (ASCHAN), A., i, 512.
 colloidal characters of (PAUL), A., i, 427.
 constitution of the resin acids of (GRÜN), A., i, 344.
 mixtures of bees' wax and (JAHN), A., i, 427.
Colour and chemical constitution (KEHRMANN and SANDOZ), A., i, 276; (MOIR), A., ii, 6, 365, 475; (KEHRMANN), A., ii, 476.
 connexion between molecular structure and (MEISENHIMER), A., ii, 364.
 reaction between optical activity and, of organic compounds (LONGOCHARM), A., ii, 288.
 calculation of, of coloured cyclic compounds (MOIR), T., 1654.
Coloured solutions, estimation of acidity of (LIZIUS), A., ii, 461.
Colouring matter, $C_{10}H_{14}O_8$, from resorcinol and salicylmetaphosphoric acid (LANGER), A., i, 345.
 $C_{18}H_{20}O_{15}$, (+ 3H₂O) from pyrogallol and salicylmetaphosphoric acid (LANGER), A., i, 345.
Colouring matters, fluorescence of, in solid solutions (SCHMIDT), A., ii, 567.
 adsorption of, by lecithin (CRICKSHANK), A., ii, 89.
 use of leuco-bases of, as developers (A. and L. LUMIERE, and SEYEWETZ), A., ii, 615.
 action of, on cotton and wool (HALLER), A., ii, 576.
 for dyeing cotton, velocity of diffusion of (AUERBACH), A., ii, 680.
 basic, synthesis of (CONSONNO and CRUTO), A., i, 679.
Colouring matters, cobaltic quinone-oxime (MORGAN and SMITH), T., 704.
 colloidal, electrical properties of (BETHE), A., ii, 14.
 photosensitising (MIKESKA, HALLER, and ADAMS), A., i, 54; (ADAMS and HALLER), A., i, 129.
 See also:—
 Betanidin.
 Betanin.
 Bilirubin.
 Hemocyanin.
 Melanin.
 Rapanidin.
 Raphanin.
 Stercobilin.
 Urobilin.
 Urochromogen.
Colpidium colpoda, culture of (PETERS), A., i, 530.
Colza, Chinese. See *Brassica campestris chinoleifera*.
Combustion, history of (v. LIPPMANN), A., ii, 107.
 mechanism of (v. WARTENBERG and SIKO), A., ii, 107.
 laws governing the propagation of (CRUSSARD), A., ii, 32.
 intra-molecular energy during (DAVID), A., ii, 85, 687.
 gaseous, at high pressures (DIXON and HAWARD), A., ii, 628.
Combustion analysis. See Analysis.
Combustion bomb of special steel (ROTH, MACHELEIT, and WILMS), A., ii, 709.
Complement action, effect of light on (BROOKS), A., i, 143.
spiro-Compounds, formation and stability of (KON), T., 810; (NORRIS and THORPE), T., 1199; (BIRCH, GOUCH, and KON), T., 1315.
Compressibility of liquids (HAMMICK), A., ii, 84.
Concentrator and vacuum pump, sulphuric acid (MAASS), A., ii, 104.
Congo-rubin, effect of various ions on solutions of (MICHAELIS and TIMÉNEZ-DIAZ), A., ii, 682.
 factors influencing the change of colour of (LÜERS), A., ii, 26; (HALLER), A., ii, 28.
 velocity of coagulation of sols of, in presence of carbamide and sucrose (REHNTÖTTEN), A., ii, 495.
Coniferae, quinic acid in the leaves of (TANRET), A., i, 295.
Conine, colour reaction of (SANCHEZ), A., ii, 719.
Co-ordination and residual affinity (MORGAN and DREW), T., 610, 1058; (MORGAN and SMITH), T., 704, 1066.

- Co-ordination and valency** (BRIGGS), T., 1876.
- Co-ordination compounds** in organic chemistry (PICCARD and DARDEL), A., ii, 394.
- Co-ordination numbers**, significance of (HÜTTIG; REIHLEN), A., ii, 193.
- influence of structure on (PIERONI), A., i, 315.
- Copper**, ultra-violet spark spectrum of (L. and E. BLOCH), A., ii, 3.
- adsorption of, by filter paper (KOLTHOFF), A., ii, 277.
- valency scale of (WÖHLER and BALZ), A., ii, 633.
- equilibrium of antimony, sulphur and (GUERTLER and MEISSNER), A., ii, 589.
- equilibrium of lead, sulphur and (GUERTLER and MEISSNER), A., ii, 402.
- equilibrium of manganese, sulphur and (GUERTLER and MEISSNER), A., ii, 640.
- catalytic action of (PALMER), A., ii, 542.
- catalytic hydrogenation by means of (SABATIER and KUBOTA), A., i, 347.
- and its oxides, activation of water by (WERNICKE and SORDELLI), A., i, 753.
- action of nitric acid on (BAGSTER), T., 82.
- reaction between nitrogen peroxide and (TARTAR and SEMON), A., ii, 336.
- action of fused sodium hydroxide on (WALLACE and FLECK), T., 1849.
- removal of, from silver cathodes (DOUGHTY and FREEMAN), A., ii, 414.
- interpenetration of zinc or tin with (WEISS and LAFITTE), A., ii, 551.
- Copper alloys** with aluminium and zinc (HAUGHTON and BINGHAM), A., ii, 335.
- with antimony and tin, electro-analysis of (FOERSTER and AANEN-SEN), A., ii, 50.
- with gold (TAMMANS), A., ii, 647.
- with nickel, activity of (NOWACK), A., ii, 208.
- with palladium, activity of (NOWACK), A., ii, 208.
- with phosphorus, thermal and electrical conductivity of (FLEIDERER), A., ii, 296.
- with tin, constitution of (HAUGHTON), A., ii, 641.
- with zinc, specific heat of (DOERING and WERNER), A., ii, 428.
- Copper bases** (*cuprammines*) :—
- Coppertetrammine** polyiodide (EPHRAIM and MOSIMANN), A., ii, 339.
- Copper salts**, toxicity of, towards saccharase (v. EULER and SVANBERG), A., i, 202.
- Copper aluminate**, new (MEDVALL and HEUBERGER), A., ii, 508.
- fluoride, chemistry and crystallography of (EDMINSTER and COOPER), A., ii, 115.
- oxides, equilibrium relations of (SMYTH and ROBERTS), A., ii, 28, 441.
- phosphide, estimation of phosphorus in (GARCIA), A., ii, 346.
- sulphate, conductivity of, compared with that of cupric ammonium citrate (DE LENAIZAN and MAURY), A., ii, 534.
- catalysis of sodium hypobromite by (FLEURY), A., ii, 70.
- Cupric hydroxide**, solubility of, in sodium hydroxide (MÜLLER), A., ii, 113.
- Cuprous ammonium carbonate**, absorption of carbon monoxide by (HAINSWORTH and TITTS), A., ii, 259.
- oxide obtained by reduction (SARMA), A., ii, 264.
- sulphide, electrical conductivity of (TUDANDT, EGGERT, and SCHINDLE), A., ii, 480.
- Copper organic compounds** :—
- double cyanides (MOLES and LA-GUIRE), A., i, 322.
- Cupritartrates** (PACKER and WACK), T., 1348.
- Cuprous bismuthocyanide** (VORNAZOS), A., i, 232.
- Copper detection, estimation, and separation** :—
- detection of (FALCIOLA), A., ii, 711.
- detection of, in plant and animal organs (KEILHOLZ), A., ii, 708.
- estimation of, electrolytically (HAWLEY), A., ii, 216.
- estimation of, iodometrically (KLASOVSKY), A., ii, 133.
- estimation of, iodometrically, and its use in sugar analysis (SHAFFER and HARTMANN), A., ii, 417.
- estimation of, in alloys with aluminium (HULOT), A., ii, 656.
- estimation of, in copper-plating (KOELSCH), A., ii, 597.
- separation of, from mercury, electrolytically (BÖTTGER), A., ii, 351.
- Copper anodes**. See Anodes.
- α -Coralydine**, salts of (SCHNEIDER and BÖGER), A., i, 802.

- Coralyn**, reduction of (SCHNEIDER and BOGER), A., i, 801.
- Coregonine** (LYNCH), A., i, 75.
- Cornette** from Rhodesia (HUTCHINSON and MACGREGOR), A., ii, 701.
- Corresponding states**, theory of, in relation to the quantum theory (BYK), A., ii, 163.
- law of, with reference to fused salts (LORENZ and HERZ), A., ii, 486.
- Corundophilite**, analysis of (SHANNON), A., ii, 459.
- Corydinecarboxylic acid**, ethyl ester (GADAMER and KNOCH), A., i, 580.
- Cotton**, action of colouring matters on (HALLER), A., ii, 576.
- substantive dyeing of (AUERBACH), A., ii, 680.
- Cottensseed oil**, catalytic hydrogenation of (KANLENBERG and RITTER), A., i, 302.
- Coumarandiones**, preparation of (STOLLÉ and KNEEL), A., i, 578.
- Coumaranones**, formation and autoxidation of (v. AUWERS), A., i, 118.
- Coumarin**, occurrence of, in plants (v. LIPPMANN), A., i, 86.
- preparation of (YANAGISAWA and KONDO), A., i, 682.
- Coumarin**, 8(?)-bromo-4:7-*d*-hydroxy-, 4:7-*d*-hydroxy-, 4-imino-7-hydroxy-, and 6:8(?)-dinitro-4:7-*d*-hydroxy- (BAUER and SCHODER), A., i, 353.
- Coumarins**, preparation of, from malic and maleic acids (BAILEY and BOETTNER), A., i, 879.
- Coumarins**, hydroxy-, physiological action of (SIEBURG), A., i, 289.
- Cows**, proteins of the colostrum, milk and serum of (WOODMAN), A., i, 625.
- Cowpeas**, fixation of nitrogen by (WHITING and SCHOONOVER), A., i, 208.
- Creatine**, preparation of, from meat extract (STEUDEL), A., i, 192.
- effect of choline on the content of, in muscle (SHANKS), A., i, 530.
- interconversion of creatinine and (HAHN and BARKAN), A., i, 515.
- relation of, to muscle tonus (HAMMETT), A., i, 530.
- estimation of, in muscle extracts (HAMMETT), A., i, 906.
- Creatinine**, influence of the nervous system on the excretion of (WEINBERG), A., i, 639.
- interconversion of creatine and (HAHN and BARKAN), A., i, 515.
- estimation of, in presence of acetone and acetoacetic acid (BLAU), A., ii, 718.
- Creatinine**, estimation of, in muscle extracts (HAMMETT), A., i, 906.
- Creatinuria** (GROSS and STEENBOCK), A., i, 700.
- o*-Cresol**, freezing point curve of the equilibrium of naphthalene with (RHODES and HANCE), A., i, 857.
- m*-Cresol**, 4-amino-, hydrochloride (HENRICH and MATULKA), A., i, 889.
- 6-amino-, and 5-bromo-6-amino-, (v. AUWERS, BORSCHÉ and WELLER), A., i, 572.
- p*-Cresol**, 2-chloro-5-nitro-, and its salts and derivatives (DAVIES), T., 866.
- Cresols**, nitrobenzoates of (HANGGI), A., i, 244.
- estimation of (CHAPIN), A., ii, 599.
- Cresol-red**, use of, as an indicator (WELLS), A., ii, 55.
- Cresotic acids**, condensation of, with chloral (ALIMCHANDANI and MEDDRUM), T., 201.
- Critical constants** (VAN LAAR), A., ii, 83; (PRUD'HOMME), A., ii, 83, 84, 378.
- and heat of vaporisation (HERZ), A., ii, 301.
- and valency of organic compounds, (HERZ), A., ii, 163.
- energy increment, and Trouton's rule (RIDEAT), A., ii, 484.
- pressure and temperature, relation between (FRIEND), A., ii, 678.
- temperature, determination of (RASOW), A., ii, 164.
- of boiling and fusion, relation between (VAN LAAR), A., ii, 622.
- Crotonaldehyde**, α -chloro-, and its cyanohydrin (MOURET, MURAT, and TAMPIER), A., i, 169.
- Crotonic acid**, bromo- (WOHL and JASCHINOWSKI), A., i, 317.
- Crucibles** of gold-palladium alloys (WASHINGTON), A., ii, 194.
- Crustaceae**, carotene from (VERNE), A., i, 77.
- Cryptobrucinolone**, preparation of, and its oxidation (LEUCHS, HELLRIEGEL, and HEERING), A., i, 883.
- Crystal hydrates**, structure of (RHODES), A., ii, 255, 681.
- Crystals**, structure of (WYCKOFF), A., ii, 245; (PERUCCA), A., ii, 493; (QUARTAROLI), A., ii, 681.
- structure and properties of (LARMOR), A., ii, 310.
- structure and chemical reactions of (KINNE), A., ii, 626.
- structure of, by the Röntgen-ray method (CANAC), A., ii, 245; (v. LAUE), A., ii, 626; (WYCKOFF), A., ii, 674.

- Crystals**, patterns obtained by the passage of Röntgen rays through (JAEGER), A., ii, 234.
- optical properties of, in the infra-red spectrum (LIEBISCH and RUBENS), A., ii, 232.
- migration velocity of ions in (v. HEVESY), A., ii, 172.
- cleavage of (WULFE), A., ii, 91.
- lattice of (REIS), A., ii, 173.
- orientation of (BECKER, HERZOG, JANCKE, and POLÁNYI), A., ii, 627.
- equilibrium of, with coexisting liquids (SMITS), A., ii, 246.
- formation of, in metals and alloys (CARPENTER and ELAM), A., ii, 641.
- rate of decomposition of (HINSHELWOOD and BOWEN), A., ii, 443.
- biaxial, measurement of rotatory power in (LONGCHAMRON), A., ii, 421.
- liquid (RIWLIN), A., ii, 215.
- molecular structure of (VAN DER LINGEN), A., ii, 631.
- properties and structure of (LEHMANN), A., ii, 174, 175.
- mixed, composition of (TAMMANN), A., ii, 173, 494.
- structure of (VEGARD), A., ii, 627.
- opaque, microscopic examination of (FRANÇOIS and LORMAND), A., ii, 493.
- transparent, photomicrography of (FRANÇOIS and LORMAND), A., ii, 626.
- Crystalline solids**, electrical conductivity of (TUBANDT), A., ii, 426; (TUBANDT, EGGERT, and SCHIBBE; TUBANDT and EGGERT), A., ii, 480.
- structure and rotatory power (LONGCHAMRON), A., ii, 531.
- Crystallisation** of compounds of high molecular weight (HERZOG and BECKER), A., ii, 438.
- of metals (ATEN and BOERLAGE), A., ii, 81; (TAMMANN), A., ii, 172.
- Crystallography** and structure of atoms (TERTSCH), A., ii, 24.
- and chemical constitution of organic compounds (SCHLEICHER), A., ii, 25.
- 9-Caminylidenefluorene** (DE FAZI), A., i, 599.
- Capferon**. See Phenylhydroxylamine, nitroso-, ammonium salt.
- Caprean** (GIEMSA and HALBERKANN), A., i, 583.
- Caprene** (GIEMSA and HALBERKANN), A., i, 583.
- Capreine**, amino- (BOEHRINGER & SÖHNE), A., i, 515.
- Cupreineazobenzenesulphonic acid** and its sodium salt (BOEHRINGER & SÖHNE), A., i, 515.
- Cupreine-5-diazoanhydride** (GIEMSA and HALBERKANN), A., i, 583.
- isoCurcumin** (HELLER), A., i, 423.
- Curtius reaction** in relation to steric hindrance (BUNING), A., i, 520.
- Cyanamide**, conversion of guanidine into (PELLIZZARI), A., i, 403.
- estimation of dicyanodiamide in (HARGER), A., ii, 224.
- Cyanates**, thio-. See Thiocyanates.
- Cyanic acid** and **Cyanides**. See under Cyanogen.
- ψ -**iso-Cyanine**, synthesis of (SCHEIBE and ROSSNER), A., i, 451.
- Cyanines**, constitution of (KÖNIG and TREICHEL), A., i, 738.
- isoCyanines** (POPE), A., i, 690.
- isomeric (HAMER), T., 1432.
- isoCyanine colouring matters**, preparation of (ADAMS and HALLER), A., i, 53.
- Cyanogen**, gaseous, viscosity and molecular size of (RANKINE), A., ii, 489; (RANKINE and SMITH), A., ii, 496.
- derivatives, action of, on oxyhaemoglobin (VLES), A., i, 281.
- Cyanogen bromide** and iodide, preparation of (GRIGNARD and CROUZIER), A., i, 404.
- chloride, preparation of (SERNA GIOTTO), A., i, 500.
- preparation and physical constants of (MAUGUIN and SIMON), A., i, 232.
- haloids, action of, on phenylhydrazine (PELLIZZARI), A., i, 620.
- Hydrocyanic acid**, anhydrous, preparation of (ZIEGLER), A., i, 165.
- constitution of (MEYER and HOPF), A., i, 776.
- in plants (MENAUL; ROSENTHAL), A., i, 484.
- in the beans of *Phaseolus lunata* (LÜHRIG), A., i, 387.
- in Sudan grass (SWANSON), A., i, 913.
- alkali salts, use of precipitated iron in the preparation of (HARA), A., i, 548.
- caesium, lithium and rubidium salts (MEYER), A., i, 501.
- potassium copper salts (MOLES and JACQUIRE), A., i, 322.
- detection of (DENIGER), A., ii, 353.
- detection of, in air (SIEVERTS and HERMSDORF), A., ii, 224.
- estimation of (CORFIELD and EASTLAND), A., ii, 526.
- Cyanides**, estimation of, iodometrically (KANÓ), A., ii, 718.

Cyanogen:—

Cyanoic acid, synthesis of (FOSSE), A., i, 165, 321; (FOSSE and LAUDE), A., i, 321, 500, 652.

Cyanuric triazide (OTT and OHSE), A., i, 231.

Cyclamines, paired (SMIRNOV), A., i, 812.

Cyclic compounds, formation of, from halogenated open-chain derivatives (INGOLD), T., 305, 951; (FARMER and INGOLD), T., 2001.

spectrochemistry of (v. AUWERS), A., ii, 73.

coloured, calculation of the colour of (MOIR), T., 1634.

Cypripedium hildendorffii, luciferase from (KANDA), A., i, 530.

Cytine, oxidation of, in contact with blood charcoal (WARBURG and NEGELEIN), A., i, 230.

formation of creatine from (GROSS and STEENBOCK), A., i, 700.

D.

D.M. See Diphenylamine arsenious chloride.

Decammine cobaltous chloride. See under Cobalt.

o-Decahydro- β naphthyl-*o*-toluic acid, and its methyl ester (SCHROETER), A., i, 861.

Dehydrobrucinolone (LEUCHS, HELLRIEDEL, and HEERING), A., i, 884.

Dehydrodantoic acid (BILTZ and KOBEL), A., i, 816.

Dehydrolithocholic acid (WIELAND and WEVLAND), A., i, 178.

Dehydro- α -pinene (*verbene*), and its derivatives (BLUMANN and ZEITSCHIEL), A., i, 426.

Dehydrothio-*p*-toluidine. See 1-Phenyl-5-methylbenzothiazole, 4'-amino-.

Dehydroxydihydrocodeine, and its salts (MANNICH and LÖWENHEIM), A., i, 124.

Dehydroxydihydrocodomethine, and its salts (MANNICH and LÖWENHEIM), A., i, 124.

Dehydroxytetrahydrocodeine, and its methiodide (MANNICH and LÖWENHEIM), A., i, 125.

De-*N*-methylidihydrocodeinone, and its methiodide (FREUND, SPEYER, and GUTTMANN), A., i, 126.

Demethyldihydrothebaccodine, and its derivatives (SPEYER and SIEBERT), A., i, 685.

De-*N*-methylidihydrothebaine, and its derivatives (FREUND, SPEYER, and GUTTMANN), A., i, 125.

Demethyldihydrothebainol, and its derivatives (SPEYER and SIEBERT), A., i, 686.

De-*N*-methylidihydrothebainone, and its hydriodide (FREUND, SPEYER, and GUTTMANN), A., i, 126.

Demethyldioxydihydrothebaccodine, and its derivatives (SPEYER and SIEBERT), A., i, 686.

d- ψ -Demethylscopolines (GADAMER and HAMMER), A., i, 589.

Density, ratio of molecular volume to (HERZ), A., ii, 436.

of aqueous solutions of electrolytes (HEYDWEILER), A., ii, 481.

of organic substances, use of lead perchlorate in determination of (THIEL and STOLL), A., ii, 17.

Deoxybenzoin, behaviour of, in the organism (SIEBERG and HARLOFF), A., i, 144.

Deoxybenzoin, *o*-nitro-, acetal of (WIELAND, BLÜMICH, and WAGNER), A., i, 554.

Deoxybilanic acid, preparation and derivatives of (WIELAND and KULENKAMPFF), A., i, 112.

Deoxydihydrothebaccodine, and its derivatives (SPEYER and SIEBERT), A., i, 685.

Deoxyethylcupreine (GIEMSA and HALBERKANN), A., i, 584.

Deoxyethylhydrocupreine (GIEMSA and HALBERKANN), A., i, 584.

2-Deoxyglucosephenylbenzylhydrazones, and its tetra-acetate (BERGMANN and SCHOTTE), A., i, 308.

Deoxyglycyrrhetin, and its acetyl derivative (P. and W. KARRER and CHAO), A., i, 240.

Deoxyquinoline dihydrochloride (GIEMSA and HALBERKANN), A., i, 584.

Deselozite (BENSAUDER), A., ii, 54.

Desiccator for use with explosives or hygroscopic substances (RUDOLPH), A., ii, 325.

Desmotropism, keto-enolic (MEYER and HOFFE), A., i, 391; (MEYER and GOTTLIEB-BILLROTH), A., i, 422.

Deuterokeratose (LANGECKER), A., i, 137.

Developers, use of leuco-bases of dyes as (A. and L. LUMIÈRE and SEYEWITZ), A., ii, 615.

Dextrin ethyl ether (LILJENFELD), A., i, 650.

estimation of, in presence of sugars (BEHR), A., ii, 526.

Dextrins from cellulose (SAMEC and MATULA), A., i, 397.

Dextrose, mutarotation of (MURSCHHAUSER), A., i, 10.

Dextrose, mutarotation of, and its catalysis by metals (GARNER and JACKMAN), T., 1936.

- Dextrose**, optical rotation of mixtures of sucrose, laevulose and (VOSBURGH), A., ii, 233.
 in hydrochloric acid (MURSCHHAUSER), A., i, 765.
 viscosity of aqueous solutions of (VARICAK), A., ii, 382.
 compounds of, with metallic salts (HELDERMANN), A., i, 396.
 oxidation of, with hydrogen peroxide, effect of phosphates on (WITZEMANN), A., i, 160.
 fermentation of, by yeast juice or zymoin (HARDEN and HENLEY), A., i, 480, 642.
 in arterial and venous blood from muscle (EGE and HENRIQUES), A., i, 905.
 detection of, in plants (BRIDEL and ARNOLD), A., ii, 465.
 estimation of (MERTZ; QUISUMBING), A., ii, 67.
 estimation of, microchemically (HOLBØLL), A., ii, 283.
 estimation of, in presence of laevulose (MURSCHHAUSER), A., ii, 715.
 estimation of, in presence of other sugars (BEHRE), A., ii, 526.
 estimation of, in blood and in cephalorachidian fluid (IONESCU and VARGOLICI), A., ii, 220.
 estimation of, in glucosides (IONESCU), A., ii, 525.
Diabetes (*glycosuria*), importance of alveolar carbon dioxide tension in (LOEB), A., i, 378.
*peri-Diacenaphthylene*rhodacene. See Leucacene.
Diacetatomercuriphenol (PAOLINI), A., i, 903.
Diacetatomercurithymol, and its sodium derivative (PAOLINI), A., i, 903.
Diacetonitrile, oxalic acid derivatives of (BENARY and SCHMIDT), A., i, 776.
Diacetonitrile-*C*-oxalic acid, and its salts (BENARY and SCHMIDT), A., i, 777.
Diacetonitrile-*C*-oxaliminolactone (BENARY and SCHMIDT), A., i, 776.
Diacetonitrile-*N*-oxalphenylhydrazide (BENARY and SCHMIDT), A., i, 776.
Diacetonitrile-*O*-oxanilide (BENARY and SCHMIDT), A., i, 777.
3:8-Di-*p*-acetoxybenzylidene-2:5-diketopiperazine (SASAKI), A., i, 196.
4:7-Diacetoxycoumarin (BAUER and SCHODER), A., i, 353.
Diacetoxymethylindanedione (FLEISCHER and STEMMER), A., i, 253.
Diacetoxymercuresolphthalein (WHITE), A., i, 71.
Di-(3-acetoxy-4-methoxybenzylidene)glycine anhydride (HIRAI), A., i, 248.
Dialuric acid, ethylamine salt (BULTZ, MARWITZKY, and HEYN), A., i, 603.
Dialysis, apparatus for (MANN), A., ii, 23.
Diamagnetism of monatomic gases (PAULI), A., ii, 161.
Diamines, aromatic, condensation of phthalic anhydride with (LIEB and SCHWARZER), A., i, 690.
Diammonium compounds. See under Ammonium.
Diamond, cohesion in (THIRING), A., ii, 330.
 artificial, preparation of (FISCHEL), A., ii, 111.
Diamylene, oxidation of (SCHINDELMEISER), A., i, 490.
Diamylose, constitution of (KARRER and NAGELI), A., i, 810.
Diamyloxynaphthalenes (v. AUWERS and FRÜHLING), A., ii, 232.
Dianilinoacetylacetone (MORGAN and DREW), T., 622.
1:3-Dianilinobenzene, *heptanitro-* (KOPCZYŃSKI and PIASECKI), A., i, 518.
4:6-Dianilinoisophthalic acid (ECKERT and SEIDEL), A., i, 864.
Dianisenzlazoxime (ROBIN), A., i, 113.
Dianisenzylazoxime (ROBIN), A., i, 113.
Di-*p*-anisidinoaceto-*p*-aniside (HALBERKANN), A., i, 562.
Di-*c*-anisylbiuret (DAINS and WERTHEIM), A., i, 61.
22-Di-*p*-anisylethane, 888-*tribromo-* (BRAND and KERCHER), A., i, 787.
Di-*p*-anisylhydroxylamine and its *N*-oxide perbromide (MEYER and REPE), A., i, 236.
Dianisylidenecyclohexanone, anisotropy of (MÜLLER), A., i, 674.
2:6-Di-*p*-anisyl-4-methylpyranhydron, and its anhydride (SCHNEIDER and MEYER), A., i, 681.
2:6-Di-*p*-anisyl-4-methylpyrylium salts (SCHNEIDER and MEYER), A., i, 683; (SCHNEIDER and SEERACH), A., i, 578.
Dianthranilomethylenecoxyselenide sulphide (BENZ and HOLZAPFEL), A., i, 31.
Diarsinic acids, aromatic (LIEB), A., i, 696.
Diastase, chemistry of (YAMAZAKI and YAMADA), A., i, 647.
 catalytic action of (VAN LAER), A., ii, 445.
 complement of (BIEDERMANN), A., i, 468.
 pancreatic, effect of alkali salts and sodium fluoride on activity of (HAHN and MICHALIE; S. and H. LANG), A., i, 282.

- 2,6-Diazoanthraquinone, 1:5-dinitro- (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 747.
- Diazoacetic acid, ethyl ester, constitution of (STAUDINGER), A., i, 327. reduction of (STAUDINGER, HAMMET, and SIEGWART), A., i, 326.
- 4-Diazoamino-3:3-dimethylisoxazole (MORGAN and BURGESS), T., 1547.
- "Diazoanhydrides," constitution of (BAMBERGER and KÖPCKE), A., i, 134; (STAUDINGER), A., i, 327.
- Diazo-compounds, relation between azoxy-compounds and (ANGELI), A., i, 364.
- coupling of aromatic hydrocarbons with (MEYER and TOCHTERMANN), A., i, 895.
- action of, on aromatic sulphonamides (DUTT, WHITEHEAD, and WORMALL), T., 2038.
- aliphatic (STAUDINGER, GAULE, and SIEGWART), A., i, 323; (STAUDINGER and HAMMET), A., i, 324; (STAUDINGER, HAMMET, and SIEGWART), A., i, 326; (STAUDINGER), A., i, 327.
- asymmetry of (MARVEL and NOYES), A., i, 15; (LEVENE and MIKSKA), A., i, 233.
- reactions of ketens with (STAUDINGER and REDER), A., i, 245.
- action of thio-acid chlorides on (STAUDINGER, SIEGWART, ANTHES, BOMMER, and GERHARDT), A., i, 43.
- action of thioketones on (STAUDINGER and SIEGWART), A., i, 43.
- s*-Diazo-*n*-hexoic acid, ethyl ester (MARVEL and NOYES), A., i, 16.
- Diazomethane, action of, on nitric acid derivatives (BILTZ and MAX), A., i, 131.
- Diazonium compounds, aromatic, sulphur analogues of (LECHER and SIMON), A., i, 860.
- non-aromatic (MORGAN and BURGESS), T., 697, 1546.
- Diazo-reaction, Ehrlich's, nature of (HERMANN and SACHS), A., i, 531.
- Dibenzeneazo-5-bromo-*m*-cresol (v. AUWERS, BORSCHKE, and WELLER), A., i, 572.
- 5-Dibenzeneazo-1:8-dihydronaphthalene (HELLER and KRETZSCHMANN), A., i, 458.
- 6-Dibenzeneazo-*m*-phenylenediamine (SCHMIDT and HAGENBÖCKER), A., i, 899.
- 5-Dibenzeneazo-2:4-tolylene-diamine (SCHMIDT and HAGENBÖCKER), A., i, 899.
- Dibenzofulvene-*o*-carboxylic acid, and its esters (SIEGLITZ and JASSOY), A., i, 791.
- Dibenzofulvene-*o*-carboxylic acid, 2:7-dibromo-, and its esters (SIEGLITZ), A., i, 110.
- 6:7:8-T'-Dibenzo-oxindigotin, 5:5'-dibromo- (FRIES and FRELLSTEDT), A., i, 432.
- Dibenzothianthrene-diquinone, and its derivatives (BRASS and KÖHLER), A., i, 435.
- 1:8-Dibenzoxynaphthalene, 2-nitroso- (HELLER and KRETZSCHMANN), A., i, 458.
- Dibenzoylacetic acid, *o*-nitro-, ethyl ester (GABRIEL and GERHARD), A., i, 658.
- Dibenzoylacetone-trile, *o*-nitro- (GABRIEL and GERHARD), A., i, 687.
- Dibenzoyl-*pp*-dibromohydrobenzoin (FRENCH and ADAMS), A., i, 342.
- Dibenzoylhydrazine, 2:4:6-tribromo- (BUSING), A., i, 520.
- N^o-N^o-Dibenzoyl-*o*-hydrazinobenzoic anhydride (HELLER and JACOBSON), A., i, 441.
- Dibenzoyl-8-hydroxy-1:2-naphthaquinone-2-oxime (HELLER and KRETZSCHMANN), A., i, 458.
- Dibenzoylmethane, true constitution of a so-called (DUFRAISSE), A., i, 114.
- Dibenzoylmethane, *o*-nitro- (GABRIEL and GERHARD), A., i, 688.
- 8:8-Dibenzoyloxydiethyl sulphide and sulfoxide, and their derivatives (FROMM and KOHN), A., i, 242.
- disulphide, *di-p*-nitro- (BENNETT and WHINCUP), T., 1861.
- 8:8'-Dibenzoyloxydiethylsulphone (FROMM and KOHN), A., i, 242.
- Di-*γ*-benzoyloxypropylmethylamine, and its salts (v. BRAUN and BRAUNSDORF), A., i, 436.
- 4:6-Dibenzoylisophthalic acid, *di-p*-bromo- (PHILIPPI and AUSLAENDER), A., i, 729.
- 2:5-Dibenzoyltetraphthalic acid, *di-p*-bromo- (PHILIPPI and AUSLAENDER), A., i, 728.
- Dibenzoyltetrahydroquinoxaline (MEISENHEIMER and WIEGER), A., i, 740.
- Dibenzyl. See *s*-Diphenylethane.
- Dibenzylaniline-4:4'-disulphonic acid (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 715.
- di*-Dibenzylidethyldipropylsilicoethane (KIPPING), T., 649.
- Dibenzylidethyldipropylsilicoethane-disulphonic acid, *l*-methylamine salt (KIPPING), T., 652.

- Dibenzylidenedihydroanemonin** (ASAHINA and FUJITA), A., i, 799.
- 1:3-Dibenzylidene-2-cyclohexanone**, action of magnesium ethyl bromide on (MANOLESCO), A., i, 513.
- 1:3-Dibenzylidene-4-methyl-2-cyclohexanone**, action of magnesium ethyl bromide on (MANOLESCO), A., i, 513.
- 3:5-Dibenzylidene-4-piperidone hydrochloride** (RUZICKA and FORNASIER), A., i, 53.
- Dibenzylmalonic acid**, *di-m*-chloro-, ethyl ester (KENNER and WITAM), T., 1460.
- Dibenzylthianthren** (RAY), T., 1965.
- 2:5-Dibenzylthiurazole** (ARNDT and MILDE), A., i, 815.
- $\alpha\delta$ -Dibiphenylene- $\Delta^{\alpha\gamma}$ -butadiene**, 2:7:2:5'-*tetrabromo*- (SIEGLITZ), A., i, 111.
- 2:2':7:7'-*tetrachloro*- (SIEGLITZ and SCHATZKE), A., i, 781.
- Dibutyl ethylene, ethylidene, methylene, and isopropylidene sulphides and their derivatives** (WHITNER and REID), A., i, 300.
- Di-*sec*-butyl sulphide**, *BB'*-*dichloro*- (POPE and SMITH), T., 399.
- 1:4-Di-*n*-butylbenzene**, and 2-amino- and 2-nitro-, and their derivatives (MORGAN and HICKINBOTTOM), T., 1891.
- Dibutylbutylal** (VAN RISSEGHEM), A., i, 498.
- Diisobutylcyanacetic acid**, *isobutyl* ester (HESSLER and HENDERSON), A., i, 317.
- Di-*sec*-butylsulphone**, *BB'*-*dichloro*- (POPE and SMITH), T., 399.
- Di-*n*-butyl-*o*- and -*m*-toluidines** (HILL and DONLEAVY), A., i, 714.
- $\alpha\gamma$ -Dibutyrylpropane**, and its disemicarbazone (BLAISE), A., i, 647.
- $\alpha\alpha'$ -Dicarbamyl-8-methylglutaric acid**, ethyl ester (GUPTA), T., 304.
- Dicarbazyls**, isomeric (PERKIN and TUCKER), T., 221.
- 1-Dicarbethoxyhydrazinonaphthalene**, 2-amino-, and its derivatives (DIELS), A., i, 280.
- Dicarboxydiphenyl sulphides**. See Diphenyl-sulphide-dicarboxylic acids.
- Di- α -carboxyethyl hydrogen phosphite**, and its calcium salt (GAUCHER and ROLLIN), A., i, 220.
- 2:6-Dicarboxypyridine-4-malonic acid**, ethyl ester (KOENIGS and JAESCHKE), A., i, 593.
- Dicellosyl selenide**, and its tetradecacetate (WREDE), A., i, 161.
- sulphide, and its derivatives (WREDE), A., i, 12.
- Dichromates**. See under Chromium.
- Dicinnamylethylamine**, and its salts (v. BRAUN and BRAUNSDORF), A., i, 773.
- Dicyanine "A"**, synthesis of (MIKESKA, HAULER, and ADAMS), A., i, 54.
- Dicyanodiamide**, action of sulphuric acid on (DAVIS), A., i, 321.
- conversion of diguanide into (PELIZZARI), A., i, 403.
- estimation of, in cyanamide and mixed fertilisers (HARGER), A., ii, 224; (JOHNSON), A., ii, 468, 605.
- Di(diethylaminomethyl) trimethylene ether** (MCLEOD and ROBINSON), T., 1473.
- Dielectric constants**, determination of (LATTEY), A., ii, 426.
- in biochemistry (KELLER), A., i, 476.
- of colloidal solutions (KELLER), A., ii, 682.
- Diet**, influence of various factors in, on calcium assimilation (HART, STEENROCK, and HOPPERT), A., i, 828.
- relation between nitrogen equilibrium and carbohydrates in (DESGETZ and BIERRY), A., i, 144.
- γ -Diethoxyacetoacetic acid**, ethyl ester, condensation of benzamidine with (JOHNSON and MIKESKA), A., i, 57.
- γ -Diethoxyacetoacetylbenzamidine** (JOHNSON and MIKESKA), A., i, 57.
- γ -Diethoxy- β -benzamidinocrotonylbenzamidine** (JOHNSON and MIKESKA), A., i, 57.
- $\alpha\alpha'$ -Diethoxy-*BB'*-bistetrahydronaphthalene** (v. BRAUN and KIRSCHBAUM), A., i, 408.
- 4:5-Diethoxy-3:9-dimethyl-4:5-dihydroureic acid** (BILTZ and KUZKHALA), A., i, 615.
- 4:5-Diethoxy-7:9-dimethyl-4:5-dihydroureic acid** (BILTZ and BELOW), A., i, 609.
- 4:4'-Diethoxydi- α -naphthyl diketone** (STAUDINGER, SCHLESKER, and GOLDSTEIN), A., i, 433.
- 4:5-Diethoxy-7-ethyl-4:5-dihydroureic acid** (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- 4:5-Diethoxy-7-methyl-4:5-dihydroureic acid** (BILTZ, MARWITZKY, and HEYN), A., i, 606.
- 4:5-Diethoxy-1:7:9-trimethyl-4:5-dihydroureic acid** (BILTZ and KUTKALLA), A., i, 610.
- Diethyl selenide**, *s-tetrachloro*- (HEAT and SZMOS), A., i, 6.
- sulphate, preparation of (LILIENTHAL), A., i, 299.

- diethyl sulphide, *ββ'*-dichloro- (DELEPINE, FLEURY, and VILLE), A., i, 494.
 physical constants of (ADAMS and WILLIAMSON), A., i, 494.
 solubility of, in ethyl alcohol (THOMPSON, BLACK, and SOUL), A., i, 390.
 toxicity and irritant effect of derivatives of (MARSHALL and WILLIAMS), A., i, 267.
ββ'-dihydroxy-, action of silver salts on (MOUREU and MURAT), A., i, 90.
 toxicity of, and its derivatives, towards urease (RONA and PETOW), A., i, 69.
ββ'-diiodo-, and its use in detection of pyrite (GRIGNARD, RIVAT, and SCATCHARD), A., ii, 282.
 disulphide, *ββ'*-dichloro- (BENNETT), T., 418.
 disulphide, *ββ'*-dichloro- (MANN, POPE, and VERNON), T., 639.
 6,6-Diethylperacacenaphthindane (FLEISCHER and SIEFERT), A., i, 255.
 1-Diethylacetyltetrahydronaphthalene-2-carboxylic acid (FLEISCHER and SIEFERT), A., i, 254.
 Diethylamine, action of ethyl nitrate on (GIBSON and MACDETH), T., 411.
p-Diethylaminobenzanilide (MEISENHEIMER, v. BUDKIEWICZ, and KANANOW), A., i, 358.
β-Diethylaminoethane, α -bromo-, hydrobromide (MEYER and HOPFF), A., i, 852.
β-Diethylaminoethyl-*p*-aminobenzoic acid, esters of, and their hydrochlorides (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 26.
β-Diethylaminoethylbenzene, 2:1-di-nitro-, and its salts (MCLEOD and ROBINSON), T., 1476.
 Diethylaminoethyltheobromine (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 126.
β-Diethylaminoethyltrimethylammonium bromide (MEYER and HOPFF), A., i, 852.
o-Diethylaminocyclohexanol, and its derivatives (OSTERBERG and KENDALL), A., i, 727.
β-Diethylamino- α -hydroxytetrahydronaphthalene (TETRALIN G. M. B. H.), A., i, 559.
β-Diethylamino-1-hydroxytetrahydronaphthalene, and its hydrochloride (STRAUS, ROHRBAKKER, and LEMMEN), A., i, 173.
 Diethylaminomethyl ethers and sulphides (MCLEOD and ROBINSON), T., 1472.
 6-Diethylamino-1-methyl-3-ethylbenzene (MAILHE), A., i, 662.
β-Diethylaminopropiophenone, and its salts (MCLEOD and ROBINSON), T., 1475.
 Diethyloxyarsine (STEINKOPF and MÜLLER), A., i, 404.
 Diethyldihydronaphthindanedione (FLEISCHER and SIEFERT), A., i, 254.
 3:6-Diethyldihydro-1:2:4:5-tetrazine (MÜLLER and HERRDEGEN), A., i, 741.
 Diethylenediaminecobalt salts (WERNER, SCHWYZER, and KARRER), A., i, 225.
trans-Diethylenediaminecobaltic salts, dichloro- (DUFF), T., 1987.
 1:3-Diethylhydantoin (BILTZ and MAX), A., i, 616.
 2:2-Diethylindane-1:3-dione-5-carboxylic acid (FLEISCHER and MELBER), A., i, 251.
 2:2-Diethylindane-1:3-dione-4:5:6:7-tetracarboxylic acid (FLEISCHER and MELBER), A., i, 252.
 2:2-Diethylindane-1:3-dione-5:6:7-tricarboxylic acid (FLEISCHER and SIEFERT), A., i, 254.
 Diethylmalonic acid, ethyl hydrogen ester (DUMESNIL), A., i, 391.
 Diethylphenoxarsonium iodide (LEWIS, LOWRY, and BERGEM), A., i, 472.
 Diethyltellurium diiodide, preparation of (VERNON), T., 695.
 3:6-Diethyltetrazine (MÜLLER and HERRDEGEN), A., i, 741.
 Diethylvinylamine (MEYER and HOPFF), A., i, 852.
 Diffusion constants, calculation of (v. EULER and HEDELIUS), A., ii, 170.
 9:9'-Difluorenyl, 2:7-di-bromo- (SIEGLITZ), A., i, 111.
 Diformyldeoxycholic acid (WIELAND and BOERSCH), A., i, 179.
 Difurfarylidenedihydronemoinin (ASAHINA and FUJITA), A., i, 799.
 Digestion, action of bile and bile salts on enzymes of (GROLL), A., i, 205.
Digitalis, function of glucosides in (WASICKY), A., i, 295.
 Digitan (CLOETTA), A., i, 40.
 Digitoxin, chemistry and pharmacology of, and its derivatives (CLOETTA), A., i, 39.
n- and *iso*-Diglucean (KARRER, WIDMER, and SMIRNOV), A., i, 765.
 Diglucosan, and its tetra-benzoate (A. and J. PICTET), A., i, 647, 766.
αβ-Diglycerides, synthesis of (BERGMANN, BRAND, and DREYER), A., i, 444.
 Diglycoll-*n*- and *iso*-butylimides (SIDO), A., i, 447.

- Diglycoll-*p*-ethoxyphenylimide** (SIDO), A., i, 448.
- Diglycollethylimide** (SIDO), A., i, 447.
- Diglycollic acid**, cyclic imide ethers of, and their sweetening power (SIDO), A., i, 447.
- Diglycollmethylimide** (SIDO), A., i, 447.
- Diglycollphenylimide** (SIDO), A., i, 448.
- Diglycoll- α -propylimide** (SIDO), A., i, 447.
- Diglycolltolylimides** (SIDO), A., i, 448.
- Diglycoll-*m*-4-xylylimide** (SIDO), A., i, 448.
- Diguaiacetyltrimethylenecartolinolcarboxylic acid**, lactone, and its derivatives (HOLMBERG), A., i, 849.
- Diguamide**, conversion of, into dicyanodiamide (PELLIZZARI), A., i, 403.
- 1:1'-Dicyclohexanespiro-3:5:3':5'-tetra-keto-4:4'-bis(1-thiodicyclohexylene-2:2':6:6'-bisdisulphide)** (NAIK), T., 1240.
- Dicyclohexylacetamide** (FOUQUE), A., i, 555.
- Dicyclohexylacetic acid**, and its salts (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 668.
- Dicyclohexylamine**, and its salts and derivatives (FOUQUE), A., i, 555.
- Dicyclohexylbenzamide** (FOUQUE), A., i, 555.
- Dicyclohexylcarbamide** (FOUQUE), A., i, 555.
- Dicyclohexylchloroamine** (FOUQUE), A., i, 555.
- Dicyclohexyldiethylammonium iodide** (FOUQUE), A., i, 555.
- Dicyclohexyldimethylammonium iodide** (FOUQUE), A., i, 555.
- Dicyclohexylnitrosoamine** (FOUQUE), A., i, 555.
- 1:3-Dihydrazinobenzene**, 4:6-*d*-nitro-, and its derivatives (BORSCHKE), A., i, 462.
- 5:5' (?) -Dihydrindylsulphone** (BORSCHKE and POMMER), A., i, 169.
- Dihydroacridine**. See Carbazine.
- 9:10-Dihydroanthraquinylidipyridinium salts** (BARNETT and COOK), T., 904.
- Dihydroartemisin ketone**, nitroso- (ASAHINA and TAKAGI), A., i, 10.
- Dihydroartemisia ketone**, hydroxyl-amino-, and its oxime (ASAHINA and TAKAGI), A., i, 10.
- Dihydroatractylol** (TAKAGI), A., i, 733.
- 2:3-Dihydro-1:4-benzosoxazine**, 6-amino- (FAIRBOURNE and TOMS), T., 2078.
- Dihydrobrucinelone-III**, hydroxy- (LEUCHS, HELLREGER, and HEERING), A., i, 883.
- Dihydrocodeine**, hydrates of (MANNICH and LÖWENHEIM), A., i, 124.
- Dihydrocodeinone**, and its salts and derivatives (MANNICH and LÖWENHEIM), A., i, 125; (FREUND, SPEYER, and GUTTMANN), A., i, 126.
- Dihydrocodide**, chloro-, methiodide (MANNICH and LÖWENHEIM), A., i, 124.
- Dihydrocoralyne**, and its salts (SCHNEIDER and BÖGER), A., i, 802.
- Dihydrocupreine**, bromo-, hydrohaloids (WELLER), A., i, 266.
- Dihydrocupresonium oxide**, and its salts (WELLER), A., i, 266.
- Dihydrocyclophenolactone** (PERKIN and TITLEY), T., 1104.
- Dihydrodrastinine** (ROSENMUND), A., i, 587.
- 2:3-Dihydroindole-2-carboxylic acid**, 5-bromo-2:3-*d*ihydroxy-, and 5-chloro-2:3-*d*ihydroxy-, and their ethyl esters (HELLER and JACOBSON), A., i, 440.
- Dihydromachilol** (TAKAGI), A., i, 732.
- Dihydromorphide**, chloro- (MANNICH and LÖWENHEIM), A., i, 124.
- Dihydro- α -8-naphthafuran-2-one**, 4-bromo-1-oximino- (FRIES and FRIEDSTEDT), A., i, 432.
- Δ^1 -Dihydronaphthalene** (STRAUS and LEMMEL), A., i, 170.
- and bromo-, and their derivatives (V. BRAUN and KIRSCHBAUM), A., i, 407.
- and 1-bromo- (STRAUS, ROHRBACKER, and LEMMEL), A., i, 171.
- Δ^1 -Dihydronaphthalene** bromo- and chloro-hydrin. See Tetrahydronaphthalene, bromohydroxy-, and chlorohydroxy-.
- Δ^1 -Dihydronaphthalene oxide** (STRAUS, ROHRBACKER, and LEMMEL), A., i, 172.
- Dihydronaphthalene series** (HOWE and LEVIN), T., 2021.
- 1:4-Dihydronaphthathioxanthone** (ULMANN and EITICH), A., i, 270.
- ar*-Dihydro- α -naphthols**, and their nitro-derivatives (HOWE and LEVIN), T., 2021.
- Dihydro- α -naphthoyl- α -benzoic acid** (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 668.
- Dihydro- α -naphthylmethyl- α -benzoic acid**, and its salts (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 668.
- Dihydronorcodeinone**, cyano- (FREUND, SPEYER, and GUTTMANN), A., i, 126.
- Dihydronorthebaine**, cyano- (FREUND, SPEYER, and GUTTMANN), A., i, 126.

- Dihydro-olibanol, and its *o*-nitrobenzoate (FROMM and KLEIN), A., i, 797.
- Dihydrophenanthraphenazine, 2:7-diamino-, and its derivatives, and 2:7-dihydroxy- (WATSON and DUTT), T., 1216.
- Dihydrophenanthraphenazine-2:7-bis-(2'-)azonaphthionic acid (WATSON and DUTT), T., 1220.
- 9:10-Dihydrophenanthrene, preparation of (HENSTOCK), T., 1461.
- Dihydro-8-picrotoxinic acid, and its ethyl ester (HORMANN and BEHNSCHNITT), A., i, 576.
- Dihydroquinine haloids (WEILER), A., i, 265.
- Dihydrothebaccodide, chloro-, and its methiodide (SPEYER and SIEBERT), A., i, 685.
- Dihydrothebaccodine, and its derivatives (SPEYER and SIEBERT), A., i, 685.
- Dihydrothebaine, and its salts (FREUND, SPEYER, and GUTTMANN), A., i, 125; (SKITA, NORD, REICHERT, and STUKART), A., i, 684.
- Dihydrothebainol, and its derivatives (SKITA, NORD, REICHERT, and STUKART), A., i, 684; (SPEYER and SIEBERT), A., i, 685.
- Dihydrothebainone, and its salts and derivatives (FREUND, SPEYER, and GUTTMANN), A., i, 126; (SKITA, NORD, REICHERT, and STUKART), A., i, 684.
- reduction of (SKITA, NORD, REICHERT, and STUKART; SPEYER and SIEBERT), A., i, 685.
- Dihydroverbenene. See 8-Pinene.
- 2:5-Diketo-1-acetyl-2-benzylidene-6-*p*-acetoxybenzylpiperazine (SASAKI and HASHIMOTO), A., i, 197.
- 2:5-Diketo-1-acetyl-3-benzylidene-6-*iso*-butylpiperazine (SASAKI and HASHIMOTO), A., i, 197.
- 2:5-Diketo-1-acetyl-3-benzylidene-6-methylpiperazine (SASAKI and HASHIMOTO), A., i, 197.
- p*-Diketocamphane, and its disemicarbazone (BREIT and GORE), A., i, 257.
- 2:3-Diketo-3:6-dianisylidenepiperazine (SASAKI), A., i, 196.
- 2:5-Diketo-3:6-dibenzylidenepiperazine (SASAKI), A., i, 196.
- 2:5-Diketo-3:6-dibenzylpiperazine (SASAKI), A., i, 196.
- 2:5-Diketo-3:6-difurfurylidenepiperazine (SASAKI), A., i, 808.
- 2:5-Diketo-3:6-difurfurylpiperazine (SASAKI), A., i, 808.
- 2:6-Diketo-4-*cyclohexenylmethyl*-4-methylpiperidine, 3:5-dicyano- (KON and STEVENSON), T., 92.
- Diketohydrindenes (*indandiones*) (FLEISCHER, MELBER, and STEMMER), A., i, 251; (FLEISCHER and SIEFERT), A., i, 254; (FLEISCHER and STEMMER), A., i, 264.
- 1:2-Diketones (SCHÖNBERG), A., i, 272; (SCHÖNBERG and NEDZATI), A., i, 275; (SCHÖNBERG and ROSENTHAL), A., i, 808.
- 1:4-Diketones, action of semicarbazide on (BLAISE), A., i, 193.
- 8-Diketones, acyclic, preparation of (BLAISE), A., i, 647.
- 2:4-Diketo-octahydroanthracene-1-carboxylic acid, and its ethyl ester (COLVER and NOYES), A., i, 409.
- β :3'-Diketouberic acid. See Succinyl-diacetic acid.
- 2:4-Diketotetrahydro-oxazoles, disubstituted derivatives of (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 737.
- 2:4-Diketo-1:2:3:4-tetrahydroquinazoline, preparation and derivatives of (SCOTT and COHEN), T., 664.
- Diketotetrahydroquinazolinecarboxylic acid, and its sodium salt and derivatives (SCOTT and COHEN), T., 667.
- Dimerurichlorophenol (FAOLINI), A., i, 903.
- Dimethinehydrazonedihydrazone, and its benzylidene derivative (MÜLLER and HERRDEGEN), A., i, 742.
- 2:7-Dimethoxyacacenaphthenequinone (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 435.
- 4:5-Dimethoxy-*o*-aldehydobenzoic acid. See *m*-Opianic acid.
- 2:4-Dimethoxyallylbenzene (MAUTHNER), A., i, 726.
- 3:5-Dimethoxybenzaldehyde, and its derivatives (MAUTHNER), A., i, 32.
- 1:3-Dimethoxybenzene, 6-chloro-2:4-dinitro- (HÜFFER), A., i, 550.
- m*-Dimethoxybenzyl alcohol, and its ethyl ether (MAUTHNER), A., i, 32.
- Di-*p*-methoxybenzylidene-*p*-aminophenylhydrazone (FRANZEN and STEINFÜHRER), A., i, 463.
- 4:5-Dimethoxy-1-*n*-butyl-3:7-dimethyl-4:5-dihydrouic acid (BILTZ and MAX), A., i, 591.
- 4:7-Dimethoxycoumarin (BAUER and SCHÖDER), A., i, 353.
- 2:6-Dimethoxy-3:7-diethoxyanthraquinonedi-imide (KEFFLER), T., 1482.
- 4:5-Dimethoxy-4:5-dihydrouic acid. See Uric acid-4:5-glycol dimethyl ether.
- 4:5-Dimethoxy-3:9-dimethyl-4:5-dihydrouic acid (BILTZ and KRZIKALLA), A., i, 614.

- 4:5-Dimethoxy-7:9-dimethyl-4:5-dihydric acid (BILTZ and BÜLOW), A., i, 609.
- 4:5-Dimethoxy-1:3-dimethyl-7-ethyl-4:5-dihydric acid (BILTZ and ZELINER), A., i, 611.
- Dimethoxy-2:2-dimethylindane-1:3-diones (FLEISCHER and STEMMER), A., i, 252.
- 6:6'-Dimethoxydiphenylenebisimino-campher (B. K. and M. SINGH and LAI), T., 1974.
- 4:5-Dimethoxy-7-ethyl-4:5-dihydric acid (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- 1:6-Dimethoxy-2-methylantraquinone (SIMONSEN and RAU), T., 1347.
- 2:4'-Dimethoxy-3-methylbenzophenone-6-carboxylic acid, and its methyl ester and silver salt (SIMONSEN and RAU), T., 1346.
- 4:5-Dimethoxy-7-methyl-4:5-dihydric acid (BILTZ, MARWITZKY, and HEYN), A., i, 606.
- 4:5-Dimethoxy-1-methyl-9-ethyl-4:5-dihydric acid (BILTZ and STREPE), A., i, 613.
- 1:8-Dimethoxynaphthalene (HELLER and KUETSCHMANN), A., i, 459.
- 3:4-Dimethoxyphenacyltheobromine (MANNICH and KROLL), A., i, 885.
- 3:4-Dimethoxy-7-phenacyltheophylline (MANNICH and KROLL), A., i, 885.
- 3:4-Dimethoxyphenyl 3:5-dimethoxystyryl ketone (MAUTHNER), A., i, 32.
- β*-3:4-Dimethoxyphenyl-*β*-*α*-naphthylpropionic acid (BAILLON), A., i, 250.
- β*-3:4-Dimethoxyphenyl-*β*-*α*-naphthylisossuccinic acid (BAILLON), A., i, 250.
- 2:4-Dimethoxyphenyl 4-nitrostyryl ketone (KAUFFMANN), A., i, 423.
- α*-3:4-Dimethoxyphenyl-*β*-theophyllin-ethanol (MANNICH and KROLL), A., i, 885.
- β*-3:4-Dimethoxyphenyl-*β*-*o*- and *p*-tolylpropionic acids, and their metallic salts (BAILLON), A., i, 250.
- β*-3:4-Dimethoxyphenyl-*β*-*o*- and *p*-tolylisossuccinic acids, and their metallic salts (BAILLON), A., i, 250.
- 4:5-Dimethoxy-*o*-phthalonic acid, and its calcium salt (FARGHER and PERKIN), T., 1734, 1736.
- 4:5-Dimethoxy-1-*n*-propyl 3:7-dimethyl-4:5-dihydric acid (BILTZ and MAX), A., i, 590.
- Dimethoxystilbenes, 4-nitro- (KAUFFMANN), A., i, 423.
- 4:4'-Dimethoxy-2:6:2':6'-tetramethyldiphenylamine (MEYER and REFFE), A., i, 236.
- 4:4'-Dimethoxy-2:6:2':6'-tetramethyldiphenylnitric oxide (MEYER and REFFE), A., i, 236.
- pp'*-Dimethoxythiobenzophenone, acide of diphenylketen on (STAUDINGER, KLEVER, BEREZA, and CONTI), A., i, 34.
- 4:5-Dimethoxy-*o*-tolyl methyl ketone, preparation and derivatives of (FARGHER and PERKIN), T., 1731.
- 4:5-Dimethoxytrimethyldihydric acids (BILTZ and MAX), A., i, 132.
- (BILTZ and KRAKALLA), A., i, 610.
- Dimethylallantoins (BILTZ and MAX), A., i, 594.
- β*-Dimethylamino-*α*-acetoxytetrahydronaphthalene (TETRALIN G. M. B. H.), A., i, 559.
- 2-*p*-Dimethylaminoanil-6:7-benzocoumaran-3-one, 5-bromo- (FELIX and FRIEDSTEDT), A., i, 432.
- 1-*p*-Dimethylaminoanilinodihydro-*α*-naphthafuran-2-one, 4-bromo-1-thiol (FELIX and FRIEDSTEDT), A., i, 432.
- 5-Dimethylaminooxobenzene, 2:4:4'-trinitro- (BOESCHKE), A., i, 481.
- Dimethylaminobenzaldehyde-*p*-nitrophenylhydrazine, potassium salt (CAUSA), A., i, 64.
- 4-Dimethylaminobenzene-*α*-2-nitrobenzoic acid (KOLBYNSKI and FISZKI), A., i, 515.
- Dimethylaminobenzenesulphonic acid, and their methyl esters (HOEVEN and SCHREIBER), A., i, 106.
- 9-*p*-Dimethylaminobenzylfluorene (DE FAZI), A., i, 569.
- 9-*p*-Dimethylaminobenzylidenefluorene (DE FAZI), A., i, 569.
- o*- and *p*-Dimethylaminobenzylidenemethylbenzothiazoles, salts of (KÖNIG and TREICHEL), A., i, 738.
- o*- and *p*-Dimethylaminobenzylidenemethylquinolines, salts of (KÖNIG and TREICHEL), A., i, 738.
- p*-Dimethylaminobenzylidene-6-phenyl-2-methylpyridine methoperebiant (KÖNIG and TREICHEL), A., i, 738.
- p*-Dimethylaminocinnamylidenemethylbenzothiazole methoperebiant (KÖNIG and TREICHEL), A., i, 738.
- p*-Dimethylaminocinnamylidenemethylquinoline methoperebiant (KÖNIG and TREICHEL), A., i, 738.
- α*-Dimethylamino-*β*-diethylamidophane and its salts (MEYER and HOFFER), A., i, 552.
- 7-Dimethylamino-2:8-dimethylphenazine, 3-amino-, methochloride, preparation of (COHEN and CRAGG), T., 2060.

- Dimethylamino- α -ethoxytetrahydro-naphthalene**, and its salts (TETRALIN G. m. b. H.), A., i, 559.
- Dimethylamino-4'-hydroxyazobenzene, 2:4-dinitro-** (BORSCHKE), A., i, 461.
- Dimethylamino-2-hydroxybenzhydrol**, and its derivatives (KRISHNA and POPE), T., 287.
- Dimethylamino-2-hydroxydistyryl ketone**, and its derivatives and additive products (HEILBRON and BUCK), T., 1500, 1515.
- Dimethylamino-3-hydroxy-9-phenyl-2-methylxanthen** (KRISHNA and POPE), T., 288.
- Dimethylamino-3-hydroxy-9-phenylxanthen**, and its benzoyl derivative (KRISHNA and POPE), T., 288.
- Dimethylamino-1-hydroxytetrahydro-naphthalene**, and its hydrochloride (STRAUS, ROHRACKER, and LEMMER), A., i, 173.
- Dimethylamino- α -hydroxytetrahydro-naphthalene**, and its salts and derivatives (TETRALIN G. m. b. H.), A., i, 559.
- Dimethylamino-2-methoxydistyryl ketone**, and its derivatives (HEILBRON and BUCK), T., 1509, 1519.
- Dimethylamino-1-methyl-3-ethylbenzene** (MAILHE), A., i, 662.
- Dimethylamino- β -methyl- Δ^2 -heptene** (HELFFENICH and DOMMER), A., i, 51.
- Dimethylamino-10-methylnaphthaphenazine**, 9-amino-, hydrochloride and methochloride, preparation of (COHEN and CRABTREE), T., 2062.
- Dimethylamino-2-methylphenazine**, 3-amino-, methochloride, preparation of (COHEN and CRABTREE), T., 2058.
- Dimethylaminophenazine**, 1-nitro-3-amino- (KORCZYNSKI and PIASECKI), A., i, 518.
- Dimethylaminophenazine**, 3-amino-, methochloride, preparation of (COHEN and CRABTREE), T., 2064.
- Dimethylaminophenol**, condensation of benzaldehyde with (KRISHNA and POPE), T., 286.
- Dimethylaminophenyl allyl ether**, and its salts (V. BRAUN and BRAUNSCHEIDT), A., i, 437.
- Dimethylaminophenyl-4-dimethylamino- α -naphthylphenylmethane** (MEISENHIMER, v. BUCKEWICZ, ANANOW, and NERESHEIMER), A., i, 359.
- Dimethylaminophenyl-4-dimethylamino-1-naphthylphenylmethane** ethiodide (MEISENHIMER and NERESHEIMER), A., i, 360.
- 4-Dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazone**. See Pyramidone.
- 8-Dimethylamino-11-phenyl- β -naphthaxanthen** (KRISHNA and POPE), T., 288.
- β -p-Dimethylaminophenyl- β - α -naphthylsuccinic acid**, and its silver salt (BAILLON), A., i, 250.
- β -p-Dimethylaminophenyl- β -m- and -p-nitrophenylpropionic acids**, and their salts and derivatives (BAILLON), A., i, 250.
- β -p-Dimethylaminophenyl- β -o- and -p-tolylpropionic acids**, and their silver salts (BAILLON), A., i, 250.
- β -p-Dimethylaminophenyl- β -o- and -p-tolylsuccinic acids**, and their silver salts (BAILLON), A., i, 250.
- 4-Dimethylaminophthalic acid**, preparation of, and its esters (SMOLIAKA), A., i, 413, 674.
- o-Dimethylamino-s-m-xyleneol**, and its phenylurethane (v. AUWERS, BORSCHKE, and WELLER), A., i, 572.
- Dimethylaniline**, surface tension of (RICHARDS and CARVER), A., ii, 384.
- o-3:4-p-Dimethylanilineazobenzoylene-anthranil** (GATTERMANS and ROLFFES), A., i, 819.
- Dimethylanilinoypyridine sodium** (EMMERT and BUCHERT), A., i, 269.
- o-Dimethylanthraquinones**, and their derivatives (FAIRBOURNE), T., 1573.
- 6a-1:1' Dimethylbenzodioxazole** (HENRICH and ROEDEL), A., i, 888.
- 1:6-Dimethylbenzimidazole**, 5-chloro- (MORGAN and CHALLENGER), T., 1541.
- 2:6-Dimethylbenzoic acid**, esterification of, and its reduction products (HUFERD and NOYES), A., i, 416.
- 2:4-Dimethylbenzoic acid**, 5-chloro- (MORGAN and HICKINBOTTOM), T., 1891.
- 4:6-Dimethylbenzoic acid**, 5-chloro- α -hydroxy- (STOLLE and KNEBEL), A., i, 578.
- β : β -Dimethyl- γ -butyrolactone** (WINDAUS and KLANHARDT), A., i, 392.
- 3:7-Dimethylcaffolide** (BLITZ and STRUPEL), A., i, 612.
- Dimethylcampholamide**, reduction of (HALLER and RAMART), A., i, 874.
- Dimethylcampholic acid**, ethyl and phenyl esters (HALLER and RAMART), A., i, 874.
- Dimethylcampholonitrile** (HALLER and RAMART), A., i, 874.
- Dimethylcampholyl alcohol** (HALLER and RAMART), A., i, 874.
- Dimethylcampholylamine**, and its salts (HALLER and RAMART), A., i, 874.
- Dimethylcatechouic** (POHLE), A., i, 428.

- 1.5-Dimethyl-1-dichloromethyl- Δ^3 5-cyclohexadien-2-one (v. AUWERS and ZIEGLER), A., i, 114.
- 2.2-Dimethylchroman (CLAISEN), A., i, 263.
- 4.6-Dimethylcoumarandione, and 5-chloro-, and their derivatives (STOLLÉ and KNEBEL), A., i, 578.
- 4.7-Dimethylcoumarandione (STOLLÉ and KNEBEL), A., i, 578.
- 2.3-Dimethylcoumarilic acid, 5-hydroxy- (KARRER, RÜDLINGER, GLATTFELDER, and WAITZ), A., i, 800.
- 2.3-Dimethylcoumarone, 5-hydroxy-, and its 4-aldehyde-derivative (KARRER, RÜDLINGER, GLATTFELDER, and WAITZ), A., i, 800.
- 1.1'-Dimethylisocyanine iodide, and amino-, and their derivatives (HAMER), T., 1439.
- 2.6-Dimethyl-4-cyanomethyl-1.4-dihydropyridine-3.5-dicarboxylic acid, ethyl ester (BENARY), A., i, 127.
- 5.5'-Dimethyl-3.3'-dicyanomethyl-2.2'-dipyrrolylmethane (BENARY), A., i, 127.
- Dimethyldiacetonalkamine. See Methyl- β -dimethylaminoisobutylcarbinol.
- Dimethyldiacetonamine, and its picrate (RÖLFES), A., i, 98.
- 4.4'-Dimethyldiethylidaminobenzenephene picrate (MEISENHEIMER, v. BUDREWICZ, and KANANOW), A., i, 358.
- 4.4'-Dimethyldiethylidaminotriphenylmethane, salts of (MEISENHEIMER and NERESHEIMER), A., i, 360.
- Dimethyldiethylidaminotriphenylmethanesulphonic acid, and its salts (MEISENHEIMER and NERESHEIMER), A., i, 360.
- 4.4':4''-Dimethyldiethylidipropyltri-aminotriphenylmethane (MEISENHEIMER, v. BUDREWICZ, KANANOW, and NERESHEIMER), A., i, 359.
- 2.6-Dimethyldihydropyridine-3.4-dicarboxylic acid, ethyl ester, and its derivatives (MUMM and BETH), A., i, 686.
- 3.9-Dimethyl-4.5-dihydrouric acid, 4.5-dihydroxy- (L. TZ and KRIZKALLA), A., i, 615.
- 7.9-Dimethyl-4.5-dihydrouric acid, 4.5-dichloro- (BILTZ and BULOW), A., i, 609.
- 1.3-Dimethylspirodihydantoin (BILTZ and KRIZKALLA), A., i, 615.
- 2.2-Dimethyl-1.3-dimethanocyclobutane, and its dibromide (OSTLING), A., i, 665.
- 2.3'-Dimethyldiphenyl, 4.4'-diamino-, derivatives of (MAYER and FREITAG), A., i, 243.
- 2.2'-Dimethyl-5.5'-disopropylindophenol N-oxide, and its hydrochloride (MEYER and ELDERS), A., i, 241.
- Dimethyleneperoxide-ethylamine. See 4-Ethyl-8.5-dihydro-1.2.4-dioxazole.
- 2.3.6.7-Dimethylenetetracarboxyanthraquinonedi-imide, and dinitro- (KEFFER), T., 1479.
- 1.4-Dimethyl-2-ethylcoumarone (v. AUWERS), A., ii, 73.
- Di-1-methyl-3-ethylphenyl-6-carbamide (MAILHE), A., i, 662.
- 1.3-Dimethyl-9-ethyl-8-thiouric acid (BILTZ, STRUFE, TOPP, HEYN, and ROBL), A., i, 612.
- 1.3-Dimethyl-7-ethyluric acid (BILTZ and ZELLNER), A., i, 611.
- 1.3-Dimethyl-9-ethyl- Δ^7 -isoxanthine (BILTZ, STRUFE, TOPP, HEYN, and ROBL), A., i, 612.
- 11.4'-Dimethylflavinduline chloride, 2,7-diamino-, and -dinitro- (WATSON and DUTT), T., 1218.
- Dimethyldurene (LEBEAU and PICHOT), A., i, 690.
- 2.6-Dimethyl- Δ^1 5-cyclohexadienecarboxylic acid (HUFFERD and NOYES), A., i, 416.
- β -Dimethylhexane, δ -amino- (MAILHE), A., i, 314.
- 1.1-Dimethylcyclohexane, preparation of, from methylheptenone (CROSSLEY and RENOUF), T., 271.
- cis- and trans-1.3-Dimethylcyclohexanes (SKITA and KADEN), A., i, 503.
- 1.1-Dimethylcyclohexane 3.5-dione, 4-chloro-4-bromo- (NORRIS and THORPE), T., 1210.
- trans-1.3-Dimethyl-4-cyclohexanol, phenylurethane of (SKITA and KADEN), A., i, 504.
- 2.6-Dimethyl- Δ^1 -cyclohexenecarboxylic acid, 1.2-dibromo- (HUFFERD and NOYES), A., i, 416.
- 2.6-Dimethyl- Δ^3 -cyclohexenecarboxylic acid (HUFFERD and NOYES), A., i, 416.
- cis- and trans-2.4-Dimethylcyclohexylamines (SKITA and KADEN), A., i, 503.
- 1.3-Dimethylhydantoin, 5-hydroxy-, preparation and derivatives of (BILTZ and HEIDRICH), A., i, 817.
- 3.3-Dimethyl-1-hydrindone, and its semicarbazone (v. AUWERS), A., i, 406.
- $\beta\beta$ -Dimethylhydroxylamine, and its salts (HEPWORTH), T., 256.
- 2.2-Dimethylindane-1.3-dione, δ -hydroxy- (FLEISCHER and STENDEL), A., i, 253.
- 2.2-Dimethylindane-1.3-dione 5.6.7-tricarboxylic acid (FLEISCHER and SIEBERT), A., i, 254.

- 1:2-Dimethylindazolium hydroxide (v. AUWERS and SCHAICH), A., i, 807.
 Dimethylisoidiotin (STOLLÉ), A., i, 596.
 1:3-Dimethylindole-2-carboxyacetamide (KERMACK, PERKIN, and ROBINSON), T., 1637.
 1:3-Dimethylindole-2-carboxylic acid (KERMACK, PERKIN, and ROBINSON), T., 1636.
 Dimethyliodoarsine, preparation of (BURROWS and TURNER), T., 428.
 N-Dimethyl-leucine, and its ethyl ester (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 229.
 N-Dimethyl-leucinol (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 229.
 Dimethyl-leucotauric acid, methyl ester (BLITZ and KOBEL), A., i, 817.
 2:2-Dimethyl-1-methanol-3- β -ethanolcyclobutane, and its dibromide (OSTLING), A., i, 665.
 1:10-Dimethyl-5:6-naphthasodiazine (KENNER and STURRINGS), T., 602.
 5:5-Dimethyl-1-p-nitrophenyl-3-p-hydroxy-o-tolylpyrazoline (v. AUWERS and LÄMMERHIRT), A., i, 465.
 3:5-Dimethylisooxazole, 4-amino-, and its derivatives, and 4-nitro- (MORGAN and BURGESS), T., 699.
 4-iodo- (MORGAN and BURGESS), T., 1547.
 3:5-Dimethylisooxazole-4-azoacetylacetone (MORGAN and BURGESS), T., 1546.
 3:5-Dimethylisooxazole-4-azo- β -naphthol (MORGAN and BURGESS), T., 702.
 3:5-Dimethylisooxazole-4-azo- β -naphthylamine (MORGAN and BURGESS), T., 703.
 3:5-Dimethylisooxazole-4-azoresorcinol (MORGAN and BURGESS), T., 703.
 3:5-Dimethylisooxazole-4-diazonium salts (MORGAN and BURGESS), T., 697.
 2:8-Dimethylphenazine, 3:7-diaminomethochloride (COHEN and CRABTREE), T., 2067.
 Dimethylphenetidine, and its derivatives, antipyretic action of (RHODE), A., i, 909.
 N-Dimethylphenylalanine, ethyl ester (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 230.
 N-Dimethylphenylalaninol (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 230.
 1- α -Dimethylphenyl-4-pyridone, and its salts (SMIRNOV), A., i, 595.
 1:1-Dimethylcyclopropane-2-carboxylic acid, 2:3-dicyano-, and its amide (BIRCH, GOUGH, and KOS), T., 1320.
 1:1-Dimethylcyclopropane-2:3-dicarboxylic acids, and their nitrile (BIRCH, GOUGH, and KOS), T., 1322.
 p- α -Dimethylpropylanilines, optically active, and their derivatives (GLATFIELD and MILLIGAN), A., i, 63.
 α -Dimethylpropylbenzene, and p-nitro- (GLATFIELD and MILLIGAN), A., i, 63.
 Dimethylpropylcarbinol, and its derivatives (DESCHAMPS), A., i, 89.
 2:3-Dimethyl-4-isopropylcyclopentylidene-3:4-dimethyl-2-isopropylcyclopentan-5-one, and its oxime (GODCHOT), A., i, 329.
 di-p- α -Dimethylpropylphenylhydrazine, and its hydrochloride (GLATFIELD and MILLIGAN), A., i, 63.
 Di-2-methyl-5-isopropylstyryl ketone, di-4-hydroxy-, and its derivatives (HELLER and BOBACH), A., i, 423.
 2:5-Dimethylpyrazine, 3:6-dicyano- and 6-hydroxy- (GASTALDI), A., i, 604.
 2:5-Dimethylpyrazine-3-carboxylic acid, 6-hydroxy-, and its sodium salt (GASTALDI), A., i, 604.
 2:3-Dimethyl-5-pyrazolone-1-benzene-4'-arsinic acid, 4-nitroso- (FARVERKE FORM. MEISTER, LUCIUS, & BRÜNING), A., i, 752.
 Dimethylpyrone, synthesis of (PHILIPPI and SEKA), A., i, 429.
 action of iodine and barium hydroxide on (COLLIE and REILLY), T., 1550.
 2:5-Dimethylpyrrole, 1-amino-, and its acetyl and formyl derivatives (BLAISE), A., i, 193.
 2:4-Dimethylpyrrole-5-aldehyde, azine and phenylhydrazones of (ALESSANDRI and PASSERINI), A., i, 592.
 Di-1-methyl-2-pyrrolidylmethanes, and their salts (HESS and ANSELM), A., i, 881.
 α - and β -Dimethyltelluronium dihaloids, crystallographic and pharmacological properties of (KNAGGS and VERNON), T., 105.
 and dinitrates (VERNON), T., 694.
 2:2-Dimethyltetrahydroacenaphth- α -hydriindene (FLEISCHER and SIEFERT), A., i, 254.
 2:2-Dimethyltetrahydroacenaphth- α -indane-1:3-dione (FLEISCHER and SIEFERT), A., i, 254.
 2:2-Dimethyltetrahydronaphth- α -hydriindeneisobutyrylcarboxylic acid (FLEISCHER and SIEFERT), A., i, 254.
 Dimethylthianthren, dichloro-derivatives (RÄY), T., 1963.
 2:5-Dimethyl-2-thienyl methyl ketone, and its semicarbazone (STEINKOPF and SCHUBART), A., i, 579.

665.
2,5-Dimethylthiolarazole, and its salts (ARNST and MILDRE), A., i, 814.
Dimethylthiophenmercuri-salts (STEIN-KOFF), A., i, 631.
1:9-Dimethyl-8-thiouric acids (BILTZ, STRUFE, TOPP, HEYN, and ROBL), A., i, 611.
Dimethyl-m-toluidines, dinitro- (BRADY and GINSON), T., 102.
1:3-Dimethyluric acid, preparation of (BILTZ and HEYN), A., i, 610.
3:9-Dimethyluric acid, and its acetyl derivative (BILTZ and KRZIKALLA), A., i, 614.
7:9-Dimethyluric acid, and its derivatives (BILTZ and BÜLOW), A., i, 609.
1:9-Dimethyl-ψ-uric acid (BILTZ and STRUFE), A., i, 612.
 5-chloro- (BILTZ and KRZIKALLA), A., i, 615.
1:9-Dimethyl-Δ²-isouric acid, 4-chloro- (BILTZ and STRUFE), A., i, 612.
Dimethylvinylamine (MEYER and HOFFE), A., i, 851.
1:9- and 3:9-Dimethyl-Δ²-isoxanthines, and their aurichlorides (BILTZ, STRUFE, TOPP, HEYN, and ROBL), A., i, 611.
Dimonosilylamine (STOCK and SOMIESKI), A., ii, 400.
Dinaphtha-1:7:1':7'-diquinone, and its derivatives (MORGAN and VINING), T., 1707.
Dinaphthanthracene series (PHILIPPI and AUSLAENDER), A., i, 728.
Dinaphthanthradiquinone, preparation of (FAIRBOURNE), T., 1580.
5:7:12:14-Dinaphthanthradiquinones, di-bromo- (PHILIPPI and AUSLAENDER), A., i, 729.
Di-8α-naphthathiazine, and its salts and derivatives (KEHRMANN and CHRISTOPOULOS), A., i, 449.
Dinaphthyl, 1:7:1':7'-tetrahydroxy-, and its tetra-acetyl derivative (MORGAN and VINING), T., 1712.
α8-Dinaphthyl-6,6'-diodibenzyl (CICUSA and ZERRINI), A., i, 196.
Di-α-naphthylchlorosarsine (MATSUMIYA), A., i, 70.
Di-α-naphthylchlorobismuthine (CHAL-LINGER and ALLPRESEN), T., 918.
peri-Dinaphthylenenaphthalenes. See Chalkacene and Rhodacene.
Di-β-naphthyl-1:3:4-oxadiazole (MÜLLER and HERRDEGEN), A., i, 742.
cis- and trans-1:2-Diols, separation of, by means of acetone (BÖESEKEN and DERN), A., i, 663.
Diopside containing manganese from the Kailash (UHLIG), A., ii, 121.
2:5-Dioxopyrrolidine-3:4-dicarboxyl-amine (PHILIPPI, HANUSCH, and v. WACEK), A., i, 438.
6:8-Dioxy-2-ethoxy-1:7:9-trimethyl-purine (BILTZ and MAX), A., i, 131.
2:6-Dioxy-8-methoxy-1:3-dimethyl-7-ethylpurine (BILTZ and MAX), A., i, 131.
6:8-Dioxy-2-methoxy-1:7:9-trimethyl-purine (BILTZ and MAX), A., i, 131.
Dipeptides, fermentation of, by yeast (ABDERHALDEN and FODOR), A., i, 481.
Diphenanthrapyridazine, and its salts (SCHÖNBERG and ROSENTHAL), A., i, 809.
cis-Diphenanthrapyridazine-4:5-dihydr-ide, 4-chloro-5-hydroxy-, hydrochloride, and 4:5-dihydroxy- (SCHÖNBERG and ROSENTHAL), A., i, 810.
αα-Di-p-phenylethane, 888-tribromo- (BRAND and KRECHER), A., i, 738.
isoDiphenic acid, synthesis of (STEGLITZ and SCHATZKES), A., i, 792.
Diphenic acid, γ-6:6'-diamino-, and γ-6:6'-dinitro- and their salts and derivatives (KENNER and STUBBINGS), T., 593, 600.
33'-Diphenoxydiethyl disulphide (BEX-NERT), T., 425.
2:3-Diphenoxy-α-naphthaquinone (ULMANN and ETTISCH), A., i, 270.
Diphenoxyphenyl-p-tolylmethane (HAHN), A., i, 243.
4:6-Diphenoxysophthalic acid (ECKERT and SEIDEL), A., i, 863.
2:5-Diphenoxytetraphthalic acid (ECKERT and SEIDEL), A., i, 864.
Diphenyl, 2:6:2':6'-tetrabromo-, and 2:3:2':4'-tetrabromo-4:6'-diamino- (R. and W. MEYER and TAEGER), A., i, 21.
 dihydroxy-derivatives (HOFMANN and HEYN), A., i, 508.
 hexanitro-, sensitiveness to mechanical shock (VAN DUIN), A., i, 19.
Diphenyl-p-acetoxypipridines (DILTHEY and others), A., i, 736.
Diphenylacetyldiphenylamidine (STAT-INGER, RATHSAM, and KEISEBERG), A., i, 34.
Diphenyl-4-acrylic acid, and its ethyl ester (KNOWLES), A., i, 418.
Diphenyl-4-aldehyde (KNOWLES), A., i, 418.
Diphenylamine, melting point of (ROGERS, HOLMES, and LINDAV), A., i, 338.
 detection of nitrates by means of (WEINHAGEN), A., ii, 346.

- Diphenylamine, *m*-amino- (WIELAND and RHEINHEIMER), A., i, 374.
 2,4-dinitro-2'-hydroxy-, sodium salt (KEHRMANN and RAMM), A., i, 128.
 thio-, absorption spectra of nitro-derivatives of (KEHRMANN and GOLDSTEIN), A., i, 271.
- Diphenylaminearsenious chloride (*adamsite*) (CONTARDI), A., i, 174.
- 9-Diphenylamino-9:10-dihydroanthracene (BARNETT and COOK), T., 912.
- Diphenyl-*p*-anisylpyridines, and their salts (DILTHEY and others), A., i, 736.
- Diphenylarsinic acid, *o*-amino-, and *o*-nitro- (KALH), A., i, 376.
m,m'-diamino- (WIELAND and RHEINHEIMER), A., i, 374.
- Diphenyl-*p*-anisylacetaldehyde, and its semicarbazone (OBERHOFF and TIPPENAU), A., i, 566.
- Diphenylanisylethanediols (OBERHOFF and TIPPENAU), A., i, 566.
- 1:3-Diphenylbarbituric acid, 5-bromo- (BACKES, WEST, and WHITELEY), T., 378.
- os*-1:1'-Diphenylbenzodioxazole (HENRICH and ROEDER), A., i, 888.
- Diphenylbenzoditrazoles (SCHMIDT and HAGENBÖCKER), A., i, 893.
- Diphenylbenzocycloheptadione dioxide (WEITZ and SCHEFFER), A., i, 369.
- Diphenylbenzthiophen (STAUDINGER, SIEGWART, ANTHER, BOMMER, and GERHARDT), A., i, 44.
- Diphenylbiuret, *di-p*-bromo- and *di-m*-nitro- (DAINS and WERTHEIM), A., i, 61.
- 2:4-Diphenyl-6-*p*-bromophenylpyrrol ferriehloride (DILTHEY, BAURIEDL, GRISSELBRECHT, SEEGER, and WINKLER), A., i, 190.
- Diphenylcarbamide, *di-p*-bromo-, and *di-m*-nitro- (DAINS and WERTHEIM), A., i, 61.
- Diphenylchloroacetyl chloride, action of magnesium phenyl haloids on (MCKENZIE and BOYLE), T., 1131.
- Diphenyl-2:3'-dicarboxylic acid, diamide and dianilide of (MAYER and FREITAG), A., i, 249.
- di*-Diphenyldiethylpropylsilicethane (KIPPING), T., 648.
- 5:5-Diphenyldihydroacridine, 1:3-*di*-nitro- (KEHRMANN, RAMM, and SCHMAJEWski), A., i, 600.
- 5:5-Diphenyldihydroacridine-3-immunion salts (KEHRMANN, RAMM, and SCHMAJEWski), A., i, 601.
- 1:6-Diphenyl-1:4 dihydropyridazine (HLEFELICH and LECHER), A., i, 421.
- Diphenyl-*pp'*-dimethoxydiphenylethylene sulphide (STAUDINGER and SIEGWART), A., i, 43.
- s*-Diphenyldimethyldiarsine (STEINKOPF and SCHWEN), A., i, 685.
- ay*-Diphenyl-*ss*-dimethylpropan-*o*-ol (AYOLIT), A., i, 564.
- 1:3-Diphenyl-5:5-dimethylpyrazoline (V. ADWERS and LÄMMERHIRT), A., i, 464.
- Diphenyldiphenylene-ethylene sulphide (STAUDINGER and SIEGWART), A., i, 43.
- 4:6-Diphenyl-2-diphenylpyrrol salts (DILTHEY, BAURIEDL, GRISSELBRECHT, SEEGER, and WINKLER), A., i, 189.
- 4:6-Diphenyl-2-*p*-diphenylpyridine, and its salts (DILTHEY and others), A., i, 736.
- Diphenyl-disulphide-di-*o*-carboxylic acid (ROSENMUND and HARMS), A., i, 104.
- pp'*-Diphenylenebisaminocamphor (B.K. and M. SINGH, and LAU), T., 1974.
- Diphenylenebisazo-anhydro-bisdiketohydrindene (DAS and GHOSH), A., i, 887.
- Diphenylenebisazo-1:3 diketohydrindene (DAS and GHOSH), A., i, 897.
- pp*-Diphenylenebisazophenylaminocamphor (FORSTER and SAVILLE), T., 797.
- Diphenylenediarsine. See Arsanthrene.
- Diphenylene-*o*-diarsinic acid. See Arsanthrene acid.
- Diphenylene ethylene, *dichloro*-, and its sulphide (STAUDINGER, SIEGWART, ANTHER, BOMMER, and GERHARDT), A., i, 43.
- αα*-Diphenylethane, nitration of (ANSCHÜTZ and HILBERT), A., i, 783.
- αα*-Diphenylethane, *αα*-*di*-nitro- (WIELAND, RAHN, and REINDEL), A., i, 783.
- αβ*-Diphenylethanes, *α*-amino-, optically active, and their salts (SÖDERQVIST), A., i, 235.
- s*-Diphenylethane (*dibenzyl*), behaviour of, in the organism (SIEBERG and HARTOFF), A., i, 146.
- αα*-Diphenylethane, *di-p*-chloro- (COOK and CHAMBERS), A., i, 332.
- 3:6 Di-*β*-phenylethyl-2:5-dimethylpyrazine (DIELS and PORTSCH), A., i, 676.
- αα*-Diphenylethylene, nitration of (WIELAND and RAHN), A., i, 783; (ANSCHÜTZ and HILBERT), A., i, 783.
- ββ*-Diphenylethylene sulphide, *αα*-*di*-chloro- (STAUDINGER, SIEGWART, ANTHER, BOMMER, and GERHARDT), A., i, 43.

- 2:4-Diphenylglyoxaline, 5:4:2'-diamino-5'-bromo-, and its derivatives (FARGHER), T., 160.
- $\alpha\alpha$ -Diphenylhexaldehyde, and its derivatives (BILLARD), A., i, 566.
- $\alpha\beta$ -Diphenylhexane- $\alpha\beta$ -diol (BILLARD), A., i, 565.
- $\alpha\alpha$ -Diphenylhexan- β -ol (BILLARD), A., i, 566.
- $\alpha\alpha$ -Diphenylhexan- β -one, and its oxime (BILLARD), A., i, 566.
- Diphenylhydrazinoacetylacetone, di-*p*-nitro- (MORGAN and DREW), T., 621.
- 1:3-Diphenylhydrazinobenzene, 4:6-dinitro- (GICA), A., i, 551.
- Diphenyl-*p*-hydroxyphenylpyridines, and their salts (DILTHEY and others), A., i, 736.
- 2:4-Diphenyl-6-*m*-hydroxyphenylpyryl salts (DILTHEY and BLOSS), A., i, 190.
- 1:2-Diphenylindene-3-one oxide, and its derivatives (WEITZ and SCHEFFER), A., i, 869.
- Diphenylisindigotin (STOLLÉ), A., i, 596.
- Diphenylketen, action of hydrogen peroxide with (NICOLET and PELC), A., i, 418.
- action of, on thio-ketones (STAUDINGER, KLEYER, BEREZA, and CORVI), A., i, 34.
- Diphenylmethane, equilibrium of amines and phenols with (KREMANN and FRITSCH), A., i, 862.
- action of sudanmonium on (LEBEAU and PICON), A., i, 660.
- Diphenylmethane series (MEISENHEIMER, V. BUDKEWICZ, and KANANOW), A., i, 356; (MEISENHEIMER, V. BUDKEWICZ, KANANOW, and NERESHEIMER), A., i, 358; (MEISENHEIMER and NERESHEIMER), A., i, 359.
- 2:4-Diphenyl-6-*m*-methoxyphenylpyryl ferrichloride (DILTHEY and BLOSS), A., i, 190.
- 2:5-Diphenyl-7-methyl-1:2:3:4:5:6-benzoditriazole (SCHMIDT and HAGEN-BOCKER), A., i, 900.
- 2:6-Diphenyl-4-*u*-ethylpyranhydrons, and its derivatives (SCHNEIDER and MEYER), A., i, 681.
- 1:4-Diphenyl-4-methyl-5-pyrazolone (WILKINSON and V. SCHROETER), A., i, 672.
- 2:6-Diphenyl-4-methylpyrylium salts (SCHNEIDER and MEYER), A., i, 681; (SCHNEIDER and SEERACH), A., i, 878.
- 2:3-Diphenyl-6-methylquinoxaline, 5-chloro- (MORGAN and GLOVER), T., 1706.
- 2:3-Diphenyl-7(8)-methylquinoxaline, 6(7)-chloro- (MORGAN and CHALLENOR), T., 1539.
- 4:6-Diphenyl-2- β -naphthylpyridine, and its picrate (DILTHEY and others), A., i, 736.
- 4:6-Diphenyl-2-naphthylpyryl ferrichlorides (DILTHEY, BAURIEDL, GEISELBRECHT, SEEGER, and WINKLER), A., i, 190.
- $\alpha\beta$ -Diphenylpentane- $\alpha\beta$ -diol (BILLARD), A., i, 565.
- $\alpha\alpha$ -Diphenylpentan- β -ol (BILLARD), A., i, 565.
- $\alpha\alpha$ -Diphenylpentan- β -one, and its semicarbazone (BILLARD), A., i, 565.
- $\Delta\alpha\alpha$ -Diphenylpenten- γ -one, 3 ϵ -dinitro- (WIELAND, BLÜMICH, and REISEN-EGGER), A., i, 553.
- Diphenylcyclopropenolcarboxylic acid, ethyl ester, and its derivatives (STAUDINGER and REBER), A., i, 248.
- Diphenyl-4-propionic acid (KNOWLES), A., i, 147.
- $\beta\beta$ -Diphenylpropionic acid, methyl ester (HERZIG and SCHLIEFFER), A., i, 245.
- 2:5-Diphenylpyrazine, monobromo-, 2-mono-, and 3:6-di-cyano-, and 6-hydroxy- (GASTALDI), A., i, 604.
- 2:5-Diphenylpyrazine-3-carboxylic acid, and its sodium salt and 6-hydroxy- (GASTALDI), A., i, 604.
- Diphenyl-sulphide-di-*o*- and -*p*-carboxylic acids (ROSENEMUND and HAINS), A., i, 104.
- Diphenylsulphone, *mm'*-diamino-, and its salts and derivatives, and *mm'*-dinitro- (MARTINET and HAERL), A., i, 854.
- 1:1'-Diphenyl-3:3'-terephthalylidenediindene (MAYER, SIEGLITZ, and LUDWIG), A., i, 555.
- Diphenyl-*pp'*-tetramethyl-diaminodiphenylethylene sulphide (STAUDINGER and SIEGWART), A., i, 43.
- Diphenylthioacetanilide (STAUDINGER, RATHSAM, and KJELSEBERG), A., i, 31.
- Diphenylthioketen (STAUDINGER, RATHSAM, and KJELSEBERG), A., i, 34.
- Diphenylthiolacetic acid, ethyl ester (STAUDINGER, RATHSAM, and KJELSEBERG), A., i, 33.
- 2:5-Diphenylthiophen-3-mercursalts (STEINKOPF), A., i, 632.
- 2:4-Diphenyl-6-*p*-tolylpyridine, and its salts (DILTHEY and others), A., i, 736.
- 2:4-Diphenyl-6-*p*-tolylpyryl ferrichloride (DILTHEY; BAURIEDL, GEISELBRECHT, SEEGER, and WINKLER), A., i, 189.

- αα*-Diphenylvaleraldehyde, and its derivatives (BILLARD), A., i, 565.
- Dipthaloyl-1-5-diaminoanthraquinone (LIEB and SCHWARZER), A., i, 691.
- αγ*-Dipropionylpropane, and its disemicarbazone (BLAISE), A., i, 647.
- Dipropyl sulphide, *ββ'*-dichloro- (POPE and SMITH), T., 397.
- Disulphide, *ββ*-diamino-, and its salts (BÖSE), A., i, 13.
- Di-*n*-propyl sulphides, *ββ'*-dichloro-, and *ββ'*-dihydroxy- (COFFEY), T., 94.
- Disopropyl, synthesis of (VAN RISSEGHEM), A., i, 489.
- 4:4'-Dipyridyl benzoates (WEITZ, ROTH, and NÉLKE), A., i, 804.
- Dipyrrol ketone, preparation of (ODDO), A., i, 129.
- Di-2-pyrryl ketone, and its hydrazone (HESS and ANSELM), A., i, 881.
- 2:2'-Diquinolyl, and its salts (SMIRNOV), A., i, 812.
- Di-2-quinolylmethane, and its salts (SCHEIBE and ROSSNER), A., i, 451.
- Disalicylidene-2:4-diaminoazobenzene (GALLAGHER), A., i, 715.
- Disalicylidene-*p-p'*-diamino-*m-m'*-dimethylidiphenyl (GALLAGHER), A., i, 715.
- Disalicylidene-naphthalenediamines (GALLAGHER), A., i, 715.
- Disaccharides, constitution of (HAWORTH and HIRST), T., 193.
- Disinfectants containing chlorine, germicidal value of (TILLEY), A., i, 151.
- Disperse systems. See Systems, disperse.
- Dispersion, relation between catalytic power and degree of (MADINAVETIA and AGUIRRECHE), A., ii, 390.
- rotatory, of optically active compounds, influence of constitution on (RUPE, KRETHLOW, and LANGBEIN), A., ii, 473.
- specific, of hydrocarbons (DARMOIS), A., ii, 361.
- Dissociation pressure (MENZIES), A., ii, 304.
- Distillation (GAY), A., ii, 85.
- separation of miscible liquids by (DUFON), T., 1988; A., ii, 302.
- distillation apparatus (MOORE), A., ii, 433; (LESSING), A., ii, 434; (SMITH), A., ii, 575.
- for small quantities of liquid (WORTACEK), A., ii, 165.
- 4:4'-Distyryl-4-dicyanine, and its picrate (FISCHER and SCHEIBE), A., i, 57.
- 4:4'-Distyryl-6-*m*-ethylquinoline, and its salts (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- 2:4-Distyrylquinoline, and 2:4-di-nitro- (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- αγ*-Disulphidoacetonedicarboxydianilide (NAIK), T., 1240.
- αγ*-Disulphidoacetonedicarboxydi-*o*- and *p*-toluidides (NAIK), T., 1241.
- m*-Disulphidobenzoic acid (SMILES and STEWART), T., 1792.
- Disulphidobis-salicylamide (NAIK), T., 1169.
- 5-Disulphido-1:3-diphenylbarbituric acid (NAIK), T., 385.
- 5:5'-Disulphinoarsenobenzene, 3:3'-diamino-4:4'-dihydroxy- (KING), T., 1113.
- 5:5'-Disulphoarsenobenzene, 3:3'-diamino-4:4'-dihydroxy- (KING), T., 1116.
- Disulphodehydroacetic acid, and its barium salt (VAN PESKI), A., i, 302.
- 2:5-Di-*p*-sulphophenyl-1:2:3:4:5:6-benzoditriazole, sodium salt (SCHMIDT and HAGENBOCKER), A., i, 898.
- 9:9'-Diterephthalylidenedifluorene, 2:2':7:7'-tetracloro- (SIEGLITZ and SCHATZKE), A., i, 782.
- 1:4-Ditoluidinoanthraquinone, 2-chloro- (ULLMANN), A., i, 426.
- γγ*-Di-*p*-toluoylpentane (FLEISCHER and MEUBEN), A., i, 251.
- 2:2'-Ditolyl, 6:6'-diamino-, and its diacetyl derivative (KENNER and STUBBINGS), T., 600.
- Di-*o*- and *m*-tolylbiuret (DAINS and WERTHEIM), A., i, 61.
- Di-*o*- and *m*-tolylcarbamides (DAINS and WERTHEIM), A., i, 61.
- Di-*p*-tolylchlorobismuthine (CHALLENGER and ALLPRESS), T., 917.
- 3:6-Di-*m*-tolylidihydro-1:2:4:5-tetrazine (MÜLLER and HERRDEGEN), A., i, 741.
- αα*-Ditolylenebisiminocamphor (B. K. and M. SINGH and LAL), T., 1973.
- αα*-Di-*m*-tolylethane-5:5'-dicarboxylic acid, *βββ* trichloro-4:4'-dihydroxy-, and its calcium salt (ALMCHANDANI and MELDRUM), T., 209.
- 1:3-Ditolylsulphonylaminoanthraquinone (BATTEGAY and CLAUDIN), A., i, 513.
- 3:6-Di-*m*-tolyl-1:2:4:5-tetrazine (MÜLLER and HERRDEGEN), A., i, 742.
- s*-Dioptrylcyclylcarbamide (LIPP and PADBERG), A., i, 560.
- Divarinol, constitution of (SONN), A., i, 414.
- Dixanthenes (ECKERT and SEIDEL), A., i, 863, 864.
- Dixenite from Sweden (FLINK), A., ii, 268.

Di-*m*-xylyl ketone, preparation of (MILLS and NODDER), T., 2099.
Doebner's reaction (CIUSA and ZERBINI), A., i, 195.
Dogfish. See *Squalus sucklii*.
Dokudame, essential oil of (SHINOSAKI), A., i, 574.
Dolomite, crystalline, from Bavaria (GLATZEL), A., ii, 120.
 from Binn, Switzerland (KOLLER), A., ii, 701.
Dulcin. See *p*-Phenetylcarbamide.
Dyeing, substantive, of cotton (AUERBACH), A., ii, 680.
Dyes. See Colouring matters.

E.

Ear-shell. See *Haliotus gigantea*.
Earth, chemistry of the surface of the (WASHINGTON), A., ii, 119.
Earths, rare, magnetisability of (WEDEKIND and HAUSKNECHT), A., ii, 237.
 colloid chemistry of salts of (DOERR), A., ii, 92.
 precipitation and separation of (NEISH and BURNS), A., ii, 560.
Earthworm, Japanese, constituents of (MURAYAMA and AOYAMA), A., i, 477.
Ebulliometer, construction and use of the (PRATOLONGO), A., ii, 593.
***E*-Ecgonine**, synthesis of (WILLSTÄTTER and BOMMER), A., i, 122.
Eder's solution, catalytic action of electrolytes on the photolysis of (BERGER), A., ii, 477.
Edestin, preparation of (BREWSTER), A., ii, 419.
Eels, vinegar, resistance of, to reagents (PASSERINI), A., i, 693.
Eggs, calcium content of white of (KREIS and STUDINGER), A., i, 905.
 effect of addition of dextrose to the white of, during incubation (TOMITA), A., i, 829.
 formation of lactic acid in, during incubation (TOMITA), A., i, 829, 830.
 behaviour of residual nitrogen in the white and yolk of, on incubation (TOMITA), A., i, 829.
 hens, albumin of the white of (SÖRENSEN), A., i, 749.
Egg-plant. See *Solanum melongena*.
Eicosioloophenic acid (ASCHAN), A., i, 513.
Ekaerbium (BOURGEREL), A., ii, 102.
Ekaerbodium (BOURGEREL), A., ii, 102.
Ektantalum (*protactinium*), properties of (HAHN and MEITNER), A., ii, 150.
Elmostearic acid, *di*- and *tetra*-bromides, and *tetra*-bromo-, ethyl ester (NICOLET), A., i, 390.
Electric discharge, chemical action of the (POMA), A., ii, 570; (POMA and BASSI; POMA and NESTI), A., ii, 571.
 in gases (SKAUPV), A., ii, 154; (SCHULTZ), A., ii, 234.
 absorption of gases in the (NEWMAN), A., ii, 295.
 disappearance of gases in the (GENERAL ELECTRIC CO.), A., ii, 369, 533.
 heater for evaporation of liquids (MOSER), A., ii, 15.
Electrical conductivity, Hertz's ionic theory of (LORENZ; LORENZ and OSSWALD), A., ii, 158.
 determination of, by means of an alternating current galvanometer (ATEN), A., ii, 159.
 measurement of (MARIE and NOTES), A., ii, 426.
 cells for measuring (RICE), A., ii, 78.
 and phosphorescence (GUDDEN and POHL), A., ii, 145.
 relation between viscosity and (WALDEN), A., ii, 160.
 and viscosity of solutions in various aliphatic amines (ELSEY), A., ii, 73.
 effect of viscosity on, of salt solutions (MACINNES), A., ii, 619.
 of metals (MEISSNER), A., ii, 480.
 of mixtures of metallic salts (BENNETT and TESCHE), A., ii, 152.
 of molten salts, measurement of (JAEGER and KAPPA), A., ii, 159.
 of salts in benzene solution (CANN and BALDWIN), A., ii, 309.
 of solutions (CHRISTIANSEN), A., ii, 9; (CLINTON), A., ii, 618.
 of aqueous solutions of electrolytes (HEYDWEILER), A., ii, 481.
 of crystalline solids (TUBANDT), A., ii, 426; (TUBANDT, EGGER, and SCHIRBE; TUBANDT and EGGER), A., ii, 480.
Electrical double refraction, dependence of, on temperature (LYON and WOLFRAM), A., ii, 6.
 in liquids, temperature coefficients of (BERGHOLM), A., ii, 568.
Electrical osmosis, measurement of (STASZEWSKI), A., ii, 13.
Electricity developed from spraying electrolytes (ZWAARDEMAKER and ZEKHUSEN), A., ii, 151.
Electrodes, reactions at (KOHSCHEUTER and STAGER), A., ii, 619; (ISACSCHEV), A., ii, 820.
 hydrogen, vessel for, adapted for titrations (HASTINGS), A., ii, 468.
 error in estimations with the (EVANS), A., ii, 271.

- Electrodes**, mercurous chloride (*calomel*), apparent irreversibility of (LAUBENGAYER), A., ii, 425.
- of aqueous solutions of quinhydrone (BILLMANN), A., ii, 372.
- thallium, potential of (JONES and SCHUMB), A., ii, 676.
- zinc, potential of (MOORE), A., ii, 236.
- Electro-deposition** of metals on rotating cathodes (HUGHES), A., ii, 677.
- Electro-endosmosis** (GYEMANT), A., ii, 298.
- Electrolysis** of salt solutions, effect of addition of metallic salts on (SCHLÖTTER), A., ii, 620.
- Electrolytes**, new conceptions of (SCHREINER), A., ii, 425, 498.
- electrical conductivity and density of (HEYDWEILER), A., ii, 481.
- development of electricity by spraying (ZWAARDEMAKER and ZEEHUISEN), A., ii, 151.
- effect of the addition of metallic salts on the electrolysis of (SCHLÖTTER), A., ii, 620.
- forces in solutions of (HUGHES), A., ii, 481.
- adsorption of, by colloids (MUTSCHALLER), A., ii, 26.
- coagulation of colloids by (SEKERA), A., ii, 31; (v. IAHN), A., ii, 684.
- binary mixed, freezing points of aqueous solutions of (KLEIN and SVANBERG), A., ii, 375.
- strong, ionisation of (HARRIS), A., ii, 160.
- abnormality of (CHAPMAN and GEORGE), A., ii, 371; (HUGHES), A., ii, 481, 573.
- activity coefficients of (LEWIS and RANDALL), A., ii, 427.
- ternary, ionisation of (DRUCKER), A., ii, 161.
- Electrolytic dissociation**, theories of (KADLOOVÁ), A., ii, 680.
- law of moduli and (BERNAOLA), A., ii, 235.
- ions, theory of (LORENZ; LORENZ and OSWALD), A., ii, 153; (LORENZ and NEU), A., ii, 481; (LORENZ and MICHAEL), A., ii, 483; (LORENZ and SCHEUERMANN), A., ii, 483, 484.
- in solids (GÜNTHER-SCHULZE), A., ii, 9.
- pole finder (PINOFF), A., ii, 12.
- resistance, measurement of (HAWORTH), A., ii, 373.
- Electromotive force** of binary alloys (KREMANN), A., ii, 10; (KREMANN and RUDERER), A., ii, 11.
- Electron**, the element (BRIGGS), A., ii, 584.
- Electrons**, emission of, in chemical reactions (RICHARDSON), A., ii, 422.
- collisions between atoms and (KLEIN and KOSSELAND), A., ii, 291.
- Elements**, compound structure of (BRIGGS), A., ii, 583.
- periodic system of (NODDER), A., ii, 38; (ODDO), A., ii, 102; (PARTINGTON; KIRCHHOFF), A., ii, 103; (SCHALTENBRAND), A., ii, 445.
- new, in periodic system (BOURGEREL), A., ii, 102.
- spiral classification of (TANSLY), A., ii, 322.
- mass spectra of (ASTON), A., ii, 474.
- liberation of hydrogen atoms from, when treated with α -rays (RUTHERFORD and CHADWICK), A., ii, 671.
- state of aggregation of (HENGLEIN), A., ii, 322.
- interconversion of (v. WEIMARN), A., ii, 545.
- attempts at transmutation of (BRINER), A., ii, 635.
- radioactive. See Radioactive elements.
- Ellagic acid**, preparation of, from gallotannin (NIERENSTEIN, SPIERS, and GEARD), T., 275.
- Emulsin** in germinating barley (MAESTRINI), A., i, 152.
- precipitation of (BRIDEL and ARNOLD), A., i, 282.
- action of, on galactose in propyl alcohol solution (BRIDEL), A., i, 469.
- hydrolysis of lactose by (BRIDEL), A., i, 824.
- Emulsions**, studies in (BHATNAGAR), T., 61, 1760.
- three phase (BECHHOLD, DEDR, and REINER), A., ii, 177.
- Energy**, changes of, during vaporisation (AUDUBERT), A., ii, 240.
- chemical, origin of (POLÁNYI), A., ii, 179.
- molecular, in gases (EWING), A., ii, 299.
- Enols**, estimation of, volumetrically, in keto-enolic mixtures (HIEBER), A., ii, 466; (DIECKMANN), A., ii, 717.
- Enterolith**, human, containing choleic acid (RAPER), A., i, 477.
- Entropy** (LATIMER), A., ii, 380; (TOLMAN), A., ii, 381.
- Enzymes** (MAESTRINI), A., i, 152, 280, 628.
- formation of (KÖHLER), A., i, 150.
- in green algae (NÖBERG), A., i, 210.
- through the action of ions (BIEDEMANN), A., i, 11.

Enzymes, formation of, in the organism

- (STAUB), A., i, 475.
 chemistry of (BOKORNY), A., i, 369, 522.
 hydrolysis of (COLIN), A., ii, 607.
 action of, under abnormal conditions (RONA), A., i, 68.
 quantitative action of (TAMMANN), A., i, 66.
 action of, on polypeptides (ABDERHALDEN and HANDOVSKY-ABDERHALDEN and KÖRTEN), A., i, 547.
 inactivation of, by toxic substances (V. EULER and SVANBERG), A., i, 68, 81, 202.
 diastatic, method of action and electrolytic nature of (HÄHN), A., i, 523.
 digestive, action of bile and bile salts on (GROLL), A., i, 205.
 pancreatic, effect of age on (FENGER and HULL), A., i, 527.
 protective, against the polysaccharides (HERZFELD and KLINGER), A., i, 236.
 proteolytic, in urine (HEDIN), A., i, 531.

Enzymes. See also:—

- Amygdalase.
 Amygdalinase.
 Amylase.
 Arginase.
 Catalase.
 Diastase.
 Emulsin.
 Erepsin.
 Glyoxalase.
 Hemicellulase.
 Hydroxynitrilase.
 Invertase.
 Lipase.
 Mannosidase.
 α -Methyl-d-inanosidase.
 Pepsin.
 Peroxydase.
 Phytase.
 Ptyalin.
 Rennin.
 Saccharase.
 Salicinase.
 Trypsin.
 Tyrosinase.
 Urease.

Enzyme action, mechanism of (COMPTON), A., i, 137.
 relation of pressure and temperature to (FRANKEL and MELDOLESI), A., i, 381.

Epheдрine, synthesis of, and its antipodes, and derivatives (SPÄTH and GÖHRING), A., i, 45.

ψ -Epheдрine, synthesis of, and its antipodes, and derivatives (SPÄTH and GÖHRING), A., i, 45.

Epicampholenic acids, and their nitriles (PERKIN and TITLEY), T., 1103.

Epicamphor (PERKIN and TITLEY), T., 1089.

***l*-Epicamphylamine** (PERKIN and TITLEY), T., 1105.

Epichlorohydrin, action of disodium hydrogen phosphate with, in aqueous solution (BAILLY), A., i, 299, 493.

Epidermis, composition of (UNNA), A., i, 637.

Epidote (SHANNON), A., ii, 459.

Equation of state, theory of (WAGNER), A., ii, 180.

for gases (LEDUC), A., ii, 429.

for liquids (JÄRVINEN), A., ii, 375.

van der Waals', calculation of constants for (HERZ), A., ii, 301, 573.

Equilibrium, diagrams of, in chemical systems (BARBAUDY), A., ii, 313.

in binary systems, influence of substitution on (KREMANX, LUTER, and ZAWODSKY), A., i, 561; (KREMANX and ZAWODSKY), A., i, 601;

(KREMANX and HOHL; KREMANX and FRITSCH), A., i, 662.

in ternary systems (MAZZETTI), A., ii, 29; (JÄNECKE; VORTISCH), A., ii, 95, 96; (SCHAEFER), A., ii, 96;

(SCHOLICH), A., ii, 97.

between mixed crystals and coexisting liquid phases (SMITS), A., ii, 246.

chemical, application of statistics to (HERZFELD), A., ii, 313.

influence of salts on, in solution (BRÜNSTED), T., 574.

heterogeneous, graphic representation of (RIVETT), A., ii, 685.

Equilibrium constants, calculation of (DUSHMAN), A., ii, 315.

variation of, with pressure (WILLIAMS), A., ii, 388.

Erepsin, intestinal, peptidolytic activity of (CLEMENTI), A., i, 144.

Erythrodextrin (BLAKE), A., i, 96.

Eserine, degradation of (STEDMAN), T., 891.

Esters, preparation of (WCVTS and BAILLEUX), A., i, 494.

by replacement of alkoxy-groups (REIMER and DOWNES), A., i, 415.

minimum boiling point mixtures of water with (FAILLERIS), A., i, 494.

alcoholysis of (DASANNACHALYA and SUBBOROUGH), A., i, 667.

catalytic reduction of (ROSENMUND, ZETZSCHE, and HEISE), A., ii, 631.

hydrolysis of, of homologues of oxalic acid (SKRABAL and SINGER), A., ii, 54.

- Esters**, hydrolysis of, by lipase in the liver (CHRISTMAN and LEWIS), A., i, 755.
- $\alpha\beta$ -unsaturated, condensation of, with sodio-malonate esters (INGOLD and POWELL), T., 1976.
- Estragole**, compound of nitrosobenzene with (ALESSANDRI), A., i, 730.
- Ethane**, physical properties of (MAASS and WRIGHT), A., i, 489.
- catalytic reduction of ethylene to (D. M. and W. G. PALMER), A., ii, 541.
- Ethane**, chloro-derivatives, action of, on the frog's heart (KIESSLING), A., i, 882.
- chlorobromo-derivatives (VAN DE WALLE), A., i, 492.
- tetrachloro-, preparation of, from acetylene and chlorine (IG), A., i, 841.
- Ethanetetracarboxylic acid**, di-imide of (PHILIPPI, HANUSCH, and v. WACEK), A., i, 438.
- Ethanesulphonic acid**, chloro-, sodium salt, preparation of (BENNETT), T., 420.
- Ethers**, action of alkali metals with (DURAND), A., i, 89.
- Ethers**, dithio-, preparation and properties of (NAIK), T., 379, 1231.
- Ethoxalylidiacetonitrile**, and its derivatives (BENARY and SCHMIDT), A., i, 776.
- Ethoxides**, metallic, decomposition of, by heat (DURAND), A., i, 492.
- sodium, effect of substitution on the reaction of benzyl chloride with (FRANZEN and ROSENBERG), A., i, 233.
- action of carbon tetrachloride with (INGOLD and POWELL), T., 1228.
- β -**Ethoxyacenaphthenequinone** (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 434.
- γ -**Ethoxyacetoacetic acid**, ethyl ester, (SOMMELET), A., i, 646.
- β -**Ethoxyatropic acid**, ethyl ester (WISLIGENUS and v. SCHRÖTTER), A., i, 673.
- β -**Ethoxybenzenesazodihydroquinine**, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
- Ethoxybenzyl alcohol**, 3-amino- and 3-nitro- (FISHMAN), A., i, 23.
- β -**Ethoxycinnamic acid**, α -bromo-, ethyl ester (WOHL and JASCHINOWSKI), A., i, 317.
- β -**Ethoxycrotonic acid**, γ -bromo-, ethyl ester (WOHL and JASCHINOWSKI), A., i, 317.
- Ethoxydihydrobrucinolone**, and its acetate (LEUCHS, HELLREGEI, and HEERING), A., i, 883.
- 5-Ethoxy-4:5-dihydrouric acid**, 4-hydroxy- (BILTZ and MAX), A., i, 617.
- 5-Ethoxy-3:9-dimethyl-4:5-dihydrouric acid**, 4-hydroxy- (BILTZ and STRUFE), A., i, 613.
- 5-Ethoxy-7:9-dimethyl-4:5-dihydrouric acid**, 4-hydroxy- (BILTZ and MAX), A., i, 132; (BILTZ and BÜLOW), A., i, 609.
- 6-Ethoxy-2:4-dimethylquinoline**, and its salts (MIKESKA, HALDER, and ADAMS), A., i, 54.
- 5-Ethoxy-1:9-dimethyl- ψ -uric acid** (BILTZ and STRUFE), A., i, 612.
- cis*-**5-Ethoxydiphenanthrapyridazine-4:8-dihydride**, 4-hydroxy-, and its salts (SCHÖNBERG and ROSENTHAL), A., i, 810.
- 5-Ethoxy-7-ethyl-4:5-dihydrouric acid**, 4-hydroxy- (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- N*-(α -**Ethoxyethyl**)-*m*- and *p*-nitroanilines, *N*- β -trichloro- (WHEELER and SMITH), A., i, 411.
- 5-Ethoxy-7-ethyl- ψ -uric acid** (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- α -**Ethoxyisohexaldehyde** (KODAMA), A., i, 220.
- 5-Ethoxyhydantoin-5-carboxylamide** (BILTZ and MAX), A., i, 617.
- Ethoxymethyl butyl sulphide**, and its mercuriodide (WHITNER and REID), A., i, 301.
- 5-Ethoxy-7-methyl-4:5-dihydrouric acid**, 4-hydroxy- (BILTZ, MARWITZKY, and HEYN), A., i, 606.
- 5-Ethoxy-9-methyl-7-ethyl-4:5-dihydrouric acid**, 4-hydroxy- (BILTZ and MAX), A., i, 132.
- 5-Ethoxy-1-methyl-9-ethyl- ψ -uric acid** (BILTZ and STRUFE), A., i, 613.
- 1-Ethoxymethylpiperidine**, preparation of (MCLEOD and ROBINSON), T., 1474.
- 6-Ethoxy-3-methyl-2-pyrone-5-carboxylic acid**, ethyl ester (INGOLD and PERRIN), T., 1601.
- 5-Ethoxy-7-methyl- ψ -uric acid** (BILTZ, MARWITZKY, and HEYN), A., i, 607.
- 2-Ethoxyphenanthrene**, 10-bromo-, and 2:10-dinitro- (HENSTOCK), T., 60.
- α -**Ethoxyisopropylurethane**, γ -chloro- (PUYAL and MONTAGNE), A., i, 108.
- 6-Ethoxy-2-pyrone-5-carboxylic acid**, ethyl ester (INGOLD and PERRIN), T., 1601.
- α -**Ethoxytetrahydronaphthalene**, and α - β -bromo- (v. BRAUN and KIRSCHBAUM), A., i, 408.

- 6-Ethoxy-1:2:3:4-tetrahydroquinoline** and its hydrochloride (SONN and BENINSCHKE), A., i, 805.
- 6-Ethoxytetrahydroquinoline-1-carboxylamide** (SONN and BENINSCHKE), A., i, 805.
- 5-Ethoxy-1:3:9-trimethyl-4:5-dihydro-uric acid, 4-hydroxy-** (BILTZ and MAX), A., i, 132; (BILTZ and STRUFE), A., i, 614.
- 5-Ethoxy-1:3:7-trimethyl- ψ -uric acid** (BILTZ and ZELLNER), A., i, 611.
- 5-Ethoxy-1:3:9-trimethyl- ψ -uric acid** (BILTZ and STRUFE), A., i, 614.
- Ethyl alcohol**, preparation of, from maize cobs (PETERSON, FRED, and VERHULST), A., i, 836.
- preparation of, from acetaldehyde (CHEMISCHE FABRIK GRIESHEIM-ELEKTRO), A., i, 155.
- vapour pressure of mixtures of ethyl ether and (OLMER), A., i, 534, 535.
- solubility of, in $\beta\beta'$ -dichlorodithiyl sulphide (THOMPSON, BLACK, and SOHL), A., i, 390.
- electrolytic oxidation of (MÜLLER and RITS Y MIKÉ), A., i, 218.
- detection of, by the iodoform reaction (SCHÖRRL), A., ii, 325.
- estimation of, volumetrically (LACHMAN), A., ii, 355.
- estimation of, in aqueous-alcoholic solutions (TOMMASI), A., ii, 136.
- estimation of, in mixtures with ethyl ether and water (MASSON and McEWAN), A., ii, 281; (DESVERGNES), A., ii, 600.
- estimation of, in wines (PRATOLONGO), A., ii, 598.
- Ethyl alcohol, β -amino-**, separation of, from choline (FOURNEAU and GONZÁLEZ), A., i, 546.
- Ethyl esters**, velocity of saponification of (CASHMORE, McCOMBIE, and SCARBOROUGH), T., 970.
- Ethyl ether**, catalysis in manufacture of (SCHLATTER), A., i, 89.
- vapour pressure of mixtures of ethyl alcohol and (OLMER), A., i, 534, 535.
- surface tension of (RICHARDS and CARVER), A., ii, 384.
- solubility of, in sodium chloride solutions (THORNE), T., 262.
- equilibrium of, with acetone and with benzene (SCHULZE), A., ii, 338.
- estimation of, in mixtures with ethyl alcohol and water (MASSON and McEWAN), A., ii, 281; (DESVERGNES), A., ii, 600.
- Ethyl iodide**, velocity of reaction of sodium β -naphthoxide and (COX), T., 149.
- Ethyl nitrate**, preparation of (HEP. WORTH), T., 254.
- action of diethylamine on (GIBSON and MACBETH), T., 441.
- nitrite, preparation of (DE WILDF and SMITH & CIE), A., i, 156.
- hydrogen sulphate (DUNNICLIFF and BUTLER), T., 1384.
- butyl sulphide, and its mercurioiodide (WHITNER and REID), A., i, 300.
- heptyl sulphide (ADAMS, BRANLET, and TENDICK), A., i, 5.
- O-Ethylacetylacetone**, and its tellurium derivative (MORGAN and DREW), T., 613.
- 3-Ethylallantoin** (BILTZ and MAX), A., i, 894.
- δ -Ethylaminovaleic acid** (RUZICKA), A., i, 591.
- 1-Ethylbarbituric acid** (BILTZ and WITTEK), A., i, 454.
- 1-Ethylbenzimidazole, 1- β -hydroxy-** and 1- β -iodo-, and their salts (MEISEXHEIMER and WIEGER), A., i, 740.
- O-Ethylbenzoylacetone**, tellurium derivative (MORGAN and DREW), T., 617.
- Ethylbetanidin** (SCHÜDEL), A., i, 486.
- β -Ethyl- Δ -butylene**, and its derivatives (KOS), T., 821.
- α -Ethylbutyric acid, α -cyano-**, methyl ester (HESLER and LAMB), A., i, 231.
- α - and β -1-(or 2)- α -Ethylbutyryl-5-cyclohexylbenzene-2(or 1)-carboxylic acids** (FLEISCHER and SIEFERT), A., i, 255.
- 1-Ethylcafolide** (BILTZ, MARWITZ, and HEYN), A., i, 609.
- β -Ethylcarbonatoatropic acid, ethylester** (WISLICIENUS and v. SCHRÖTTER), A., i, 673.
- 4-Ethyl-carbonato-3:5-dimethoxybenzylidenemalonie acid** (SPÄTH), A., i, 30.
- 2-Ethylcarbonato- α -naphthyl bromomethyl ketone** (FRIES and FRIEDSTEDT), A., i, 424.
- Ethylcarbonatophthalimide** (HELLER and JACOBSON), A., i, 440.
- Ethyl carbonatosinapic acid** (SPÄTH), A., i, 30.
- Ethylcarbonatosuccinimide** (HELLER and JACOBSON), A., i, 440.
- Ethyl-carbonatoxyringinaldehyde** (SPÄTH), A., i, 30.
- Ethylcarbonatoisovanillie acid**. See 4-Methoxy-3-ethylcarbonatobenzoic acid.
- 2-Ethylcarboxyanilino- p -benzoquinone** (LINKE), A., i, 186.
- 2-Ethylcarboxyanilinetoluquinone** (LINKE), A., i, 186.

- Ethylcellulose**, depolymerisation of (HESS, WITTELSBACH, and MESSMER), A., i, 710.
- Ethylchloroethylcarbinylurethane** (PUYAL and MONTAGNE), A., i, 108.
- Ethylchlorostannic acid**, and its salts (DRUCE), T., 761.
- Ethylcuprean** (GIEMSA and HALBERKANN), A., i, 583.
- Ethylcupreene** (GIEMSA and HALBERKANN), A., i, 583.
- β -Ethylcupreine** (GIEMSA and HALBERKANN), A., i, 583.
- Ethylcupreine**, chloro- (GIEMSA and HALBERKANN), A., i, 583.
- Ethylidihydrocupreine** (*optochin*) nitrate, preparation of (VAN ITALLIE and LE COULTRE; VAN DER VEEN), A., i, 45.
- 4-Ethyl-3,5-dihydro-1:2:4 dioxazole** (v. GISEWALD and SIEGENS), A., i, 356.
- N-Ethylidihydronorhydrastinine hydrochloride** (ROSENEMUND), A., i, 587.
- 7-Ethyl-4,5-dihydronic acid**, 4,5-dihydroxy-, hypochlorite (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- Ethylene**, preparation of, by reduction of acetylene (ROSS, CULBERTSON, and PARSONS), A., i, 761.
- physical properties of (MAASS and WRIGHT), A., i, 489.
- absorption of, by sulphuric acid (PLANT and SIDGWICK), A., i, 153.
- propagation of flame in mixtures of air and (CHAPMAN), T., 1677.
- oxidation of (WILLSTÄTTER and BONMER), A., i, 93.
- catalytic reduction of (D. M. and W. G. PALMER), A., ii, 541.
- condensation of benzoyl chloride and, in presence of aluminium chloride (NORRIS and COUCH), A., i, 32.
- constitution of mercury derivatives of (MANCHOT), A., i, 329.
- action of selenium monochloride on (HEATH and SEMON), A., i, 6.
- action of sulphur monochloride with (MANN, POPE, and VERNON), T., 634.
- Ethylene**, substituted derivatives, action of sulphur monochloride on (POPE and SMITH), T., 396.
- $\alpha\beta$ -dibromo-**, chlorination of (VAN DE WALLE), A., i, 492.
- chloro-derivatives, action of, on the frog's heart (KIESSLING), A., i, 382.
- di*chloro-, use of, as a solvent (WACKER), A., i, 293.
- tri*chloro-, preparation of (ICI), A., i, 841.
- chlorobromo-derivatives, stereoisomeric (VAN DE WALLE), A., i, 491.
- Ethylene bis- β -chloroethyl sulphide** (BENNETT and WHINCOP), T., 1862.
- Ethylene bis- β -hydroxyethyl sulphide** (BENNETT and WHINCOP), T., 1862.
- Ethylenediaminetetrasulphonic acid**, potassium salt (FARBENFABRIKEN VORM. F. BAYER & Co.), A., i, 316.
- 6:7-Ethylenedioxyquinoline**, and its hydrochloride (SONN and BENIRSCHKE), A., i, 805.
- 6:7-Ethylenedioxy-1:2:3:4-tetrahydroquinoline**, and its hydrochloride (SONN and BENIRSCHKE), A., i, 895.
- Ethylene glycol dinitrate**, preparation of (HEPWORTH), T., 258.
- Ethylene glycol**, *monothio*-, preparation of (BENNETT), T., 422.
- derivatives of (BENNETT and WHINCOP), T., 1860.
- 1:4-*endo*-Ethylene-6-methyltetrahydroquinoxaline**, and its salts (MOORE and DOUBLEDAY), T., 1174.
- Ethylenic compounds**, shifting of the bond in, in presence of acid catalysts (GILLET), A., i, 490, 533.
- 9-Ethylfluorene**, 2:7-dibromo- (SIEGLITZ), A., i, 111.
- Ethylglycoside** (BERGMANN and MIKKELEY), A., i, 763.
- 4-Ethylglyoxaline**, β -amino-, physiological action of (SCHENK), A., i, 640.
- benzoyl derivatives (GERNGROSS), A., i, 57.
- Ethylhexamethylenetetrammonium salts** (HAHN and WALTER), A., i, 651.
- α -Ethyl- γ -hexolactone** (WINDAUS and KLANHARDT), A., i, 392.
- Ethylhydrocuprean**, and its platinum-chloride (GIEMSA and HALBERKANN), A., i, 582.
- Ethylhydrocupreene** (GIEMSA and HALBERKANN), A., i, 584.
- Ethylhydrocupreine**, chloro- (GIEMSA and HALBERKANN), A., i, 584.
- Ethylhydroquinine**, amino- (BOEHRINGER and SOHNE), A., i, 516.
- 3-Ethyl-4- β -hydroxy- $\beta\beta\beta$ -trichloro- α -propylpyridine**, and its salts (KOENIGS and OTTMANN), A., i, 595.
- Ethyl- β -hydroxyethylallylamine** (v. BRAUN and BRAUNSDORF), A., i, 772.
- Ethylendibis-*p*-nitrophenylacetamide** (GUPTA), T., 302.
- 7:8-Ethylenedioxy-2:4-bis-trichloro-methyl-6- $\beta\beta\beta$ -trichloro- α -hydroxyethyl-1:3-benzodioxine-5-carboxylic acid**, $\beta\beta\beta$ -trichloro-, lactone (ALIM-CHANDANI and MELDRUM), T., 208.
- Ethylmercurithiocyanate** (STEINKOPF), A., i, 682.

- Ethylmorphine**, compound of phenyl-ethylbarbituric acid with (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 354.
- μ -**Ethyl-1:2-naphthiminasole** (FISCHER, DIETRICH, and WEISS), A., i, 58.
- 1-**Ethylindole** (STOLLÉ), A., i, 596.
- 3-**Ethylcyclopentane-1:2:4-trione** and its oxime (KOENIGS and OTTMANN), A., i, 596.
- 3 **Ethylcyclopentane-1:2:4-trione-glyoxylic acid**, and its ethyl ester (KOENIGS and OTTMANN), A., i, 596.
- 5-**Ethylphenazonium perchlorate**, 1:3-dinitro- (KEHRMANN and EFFRONT), A., i, 602.
- 6-**Ethylphenoxarsine** (LEWIS, LOWRY, and BERGEM), A., i, 472.
- Ethyl- α -picolinium mercuri-iodide**, crystallography of (PORTER), T., 1772.
- 1-**Ethyl-2-piperidone** (RUZICKA), A., i, 591.
- Ethylpropylcarbinylurethane**, chloro- (PUVAL and MONTAGNE), A., i, 108.
- Ethylpyridinium mercuri-iodide**, crystallography of (PORTER), T., 1770.
- salts, β -amino- (GABRIEL), A., i, 59.
- β -3 **Ethyl-4-pyridylacrylic acid**, and its salts and dibromo- (KOENIGS and OTTMANN), A., i, 596.
- 6-**Ethylquinaldine**, and its methiodide (MILLS, HARRIS, and LAMBOURNE), T., 1300.
- Ethylquinine**, amido- (BOEHRINGER and SOHNE), A., i, 515.
- Ethylselenocarbamide**, and its additive compound with allyl bromide (SCHMIDT), A., i, 775.
- Ethylstannic acid**, and its salts and derivatives (DRUCE), T., 758.
- p*-**N-Ethylthiolaminobenzoic acid** (BINZ and HOLZAPFEL), A., i, 31.
- N*-**Ethylthiolanthranilic acid** (BINZ and HOLZAPFEL), A., i, 31.
- 2-**Ethylthiophenmercuri-salts** (STEINKOPF), A., i, 631.
- 9-**Ethyl 8-thioctic acids** (BILTZ, STRUPE, TOPP, HEYN, and ROEL), A., i, 611.
- 5-**Ethyl- m -tolmit acid**, 4-hydroxy-5- β -dichloro-, and its calcium salt (ALIMCHANDANI and MELDRUM), T., 208.
- 1-**Ethyluramil** (BILTZ and WITTEK), A., i, 455.
- Ethylurethane**, chloro- (PUVAL and MONTAGNE), A., i, 108.
- 1-**Ethyluric acids** (BILTZ and WITTEK), A., i, 455.
- 7-**Ethyluric acid**, and its derivatives (BILTZ, MARWITZKY, and HEYN), A., i, 607.
- 7-**Ethyl- ψ -uric acid** (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- 7-**Ethyl- ψ -uric acid**, methylation of (BILTZ and ZELLNER), A., i, 610.
- Ethylisovanillic acid**. See 4-Methoxy-3-ethoxybenzoic acid.
- Ethylvinylcarbinylurethane** (PUVAL and MONTAGNE), A., i, 108.
- 1-**Ethylvioluric acid**, and *mono-* and *di-* bromo- and -chloro-, and their salts and derivatives (BILTZ and WITTEK), A., i, 455.
- Eucalyptus oil**, constituents of (READ and SMITH), T., 779.
- constitution of the peppermint ketone of (GIVAUDAN & Co.), A., i, 793.
- n*- and *iso*-**Eugenol**, analysis of mixtures of, by means of the melting points of their benzoates (McKIE), T., 777.
- Europium**, absorption spectrum of (FRANDTL), A., ii, 475.
- Evodiamine** and its derivatives (ASABINA and MAYEDA), A., i, 48.
- iso*-**Evodiamine**. See Evodiamine hydrate.
- Explosion pressure**, piezoelectric method of measuring (KEYS), A., ii, 828.
- Explosives**, properties of (ROBERTSON), T., i.
- stability of (DUCLAUX), A., i, 545; (ERIC), A., i, 650.
- estimation of the thermal stability of (TALIANI), A., ii, 524.
- thermal decomposition of (HYSSELWOOD), T., 721.
- Explosive mixtures of gases**, behaviour of, at low pressures (STAVENHAGEN and SCHUCHARD), A., ii, 33.
- Extraction apparatus** (MANN), A., ii, 52.
- Sorhlet (HAGEN), A., ii, 104, 501, 634; (SOEPF), A., ii, 212; (SIMON), A., ii, 501.

F.

- Faeces**, human, composition of the ether extract of (GARDNER), A., i, 639.
- detection of blood in (VAN ECK), A., ii, 472.
- estimation of calcium, magnesium, potassium and sodium in (HISDAL and KRAMER), A., ii, 655.
- estimation of oxalic and oxaluric acids in (BAU), A., ii, 356.
- Fagaramide hydrochloride** (GOODES), A., i, 488.
- Fats**, formation of, from carbohydrates according to the law of probability (WITZEMANN), A., ii, 250.
- composition of (SCHIRMER), A., i, 633.
- in blood (LEMMELAND), A., i, 633.
- interchange of alkyl groups between alcohols and (GRÜN, WITTEK, and SCHOLZE), A., i, 222.

- Fats**, reduction of osmium tetroxide by (PARTINGTON and HUNTINGFORD), A., ii, 514.
 vitamin-A in (ARON and GRALKA), A., i, 475.
 action of ozone on vitamin-A in (ZILVA), A., i, 475.
 estimation of the acetyl value of (ANDRÉ), A., ii, 419.
 estimation of the iodine value of (MARGOSCHES and BARU), A., ii, 716.
 estimation of the saponification, iodine and bromine numbers of (SCHULEK), A., ii, 603.
 estimation of, in butter (HEPBURN), A., ii, 716.
Fergusonite from Japan (SHIBATA and KIMURA), A., ii, 269.
Fermentation (ABDERHALDEN and FODOR), A., i, 481.
 studies in (BIEDERMANN), A., i, 11.
 influence of electric potential on the rate of (POTTER), A., i, 532.
 kinetics of (FODOR), A., ii, 27.
 preparation and estimation of substances which accelerate (FRANKEL and SCHWARZ), A., ii, 228.
 alcoholic (KOSTYCHEV and FREY; KOSTYCHEV and SUBKOVA), A., i, 149; (KOSTYCHEV and ELIASBERG), A., i, 150; (HARDEN and HENLEY), A., i, 480, 642.
 measurement of the course of (SCHWEIZER), A., ii, 227.
 catalysts in (NEUBERG and SANDBERG), A., i, 82.
 concentration and purification of liquids from (REILLY and HICKINBOTTOM), A., ii, 599.
 pressure developed by (KOLRWITZ), A., i, 757.
 effect of *Azotobacter* on (KATSER), A., i, 642.
 production of glycerol in (SCHWEIZER), A., i, 757.
 of sugars (NEUBERG and URSUM), A., i, 81.
 yeast. See Yeast.
Ferrates and Ferric salts. See under Iron.
Ferriyanic acid, thallous salt (CUTTICA and CANNERI), A., i, 322.
Ferriyanides, absorption spectra of (GETMAN), A., ii, 287.
Ferrimalonic acid, compounds of (WEINLAND and SIERP), A., i, 537.
Ferrinoxalic acid, potassium salt (THOMAS), T., 1140.
 compounds of (WEINLAND and SIERP), A., i, 537.
Ferrites. See under Iron.
Ferroanthophyllite from Idaho (SHANNON), A., ii, 703.
Ferrocyanides, absorption spectra of (GETMAN), A., ii, 287.
Ferromagnetic substances, action of temperature on the properties of (CHEVENARD), A., ii, 484.
Ferrous salts. See under Iron.
Fertilisers. See Manures, artificial.
Fibres, examination of by means of X-rays (HERZOG and JANCKE), A., i, 12.
Fibrin, digestion of, by trypsin (EDIE), A., i, 750.
Fibrinogen, preparation of (MCLEAN), A., i, 467.
 action of sodium hydroxide on the coagulation of (BARRATT), A., i, 467.
Fibromyoma tissue, analysis of (HINSCH), A., i, 476.
Ficus vogelii, caoutchouc from (ULTÉE), A., i, 428.
Films, formation of, on the surface of (LABROUSTE), A., ii, 18.
Filters, membrane, use of, in analysis (JANDER and STUHLMANN), A., ii, 711.
Filter paper, adsorption of salts and alkaloids by (KOLTHOFF), A., ii, 213.
Filtration apparatus for use with anhydrous or indifferent gases (WOLFRAM), A., ii, 395.
Fir tree. See *Pinus sylvestris*.
Fish, distribution of zinc salts in (BODANSKY), A., i, 907.
 Pacific Coast, fat content of (DILL), A., i, 834.
Fish oils, separation of the unsaturated fatty acids from (TSUJIMOTO), A., i, 78.
Flagstaffite (GUILD), A., ii, 51.
Flame as a stationary dispersoid system (v. WEIMARN), A., ii, 539.
 high temperature (HAUSER and RIE), A., ii, 623.
 propagation of, in mixtures of ethylene and air (CHAPMAN), T., 1677.
Flavones, preparation of (v. AUWERS and ANSCHÜTZ), A., i, 682.
Flavones, 6- and 8-chloro- (RUHEMANN), A., i, 431.
Flocculation (KREUT and VAN ARKEL), A., ii, 312.
Floridex, photosynthesis in the (WURMSER and DUCLAUX), A., i, 211.
Fluoranthene, constitution of (MAYER and FREITAG), A., i, 248.
Fluorene, action of sodammonium on (LEBEAU and PICON), A., i, 560.
 action of, on aldehydes (DE FAZI), A., i, 563.
Fluorene series (SIEGLITZ), A., i, 110; (STAHRFOSS), A., i, 335; (SIEGLITZ and SCHATZKES), A., i, 781, 792; (SIEGLITZ and JASSOV), A., i, 791.

- Fluorene-9-acetic acid**, ethyl ester and its derivatives (SIEGLITZ and JASSOY), A., i, 791.
- Fluorene-9-acetic acid**, 2:7-dibromo-, and its esters (SIEGLITZ), A., i, 110.
- Fluorene-9-glycollic acid**, ethyl ester (WISLICENUS and WEITMEYER), A., i, 511; (SIEGLITZ and JASSOY), A., i, 791.
- Fluorene-9-glycollic acid**, 2:7-dibromo-, and its esters (SIEGLITZ), A., i, 110.
- Fluorene-glyoxylic acid**, ethyl ester; reduction of (WISLICENUS and WEITMEYER), A., i, 511.
- Fluorene-9-glyoxylic acid**, 2:7-dibromo-, and its derivatives (SIEGLITZ), A., i, 110.
- 2:7-dichloro-, ethyl ester, and its benzoyl derivative (SIEGLITZ and SCHATZKES), A., i, 782.
- Fluorene-9-hydroxyacetic acid**. See Fluorene-9-glycollic acid.
- Fluorene-9-propionic acid**, β -2:7-dibromo- (SIEGLITZ), A., i, 111.
- Fluorenone phenylsemicarbazone** (STAUDINGER and HAMMETT), A., i, 323.
- Fluorenone-3-carboxylic acid** (SIEGLITZ and SCHATZKES), A., i, 792.
- Fluorescein**, detection of (LOMBARD), A., ii, 528.
- Fluorescein**, thio-, constitution and technical applications of (MAKI), A., i, 183.
- Fluorescence** and constitution of benzoxazoles (HENRICH), A., i, 886.
- Fluorescent liquids**, effect of light on the conductivity of (SOULAN), A., ii, 288.
- Fluorine**, atomic weight of (MOLES and BATUECAS), A., i, 389.
- preparation of (MEYER and SANDOW), A., ii, 398.
- action of, on potassium hydrogen sulphate (BRUNNER), A., ii, 45.
- Fluorine compounds**, toxicity of, towards plants (WÖRER), A., i, 213.
- Hydrofluoric acid**, infra-red absorption spectrum of (IMMS), A., ii, 5.
- equilibrium of the reaction between sulphuric acid and (TRAUBE and REUEKE), A., ii, 539.
- compound of thallium and (BARLOT), A., ii, 113.
- Fluorides**, chemistry and crystallography of (EDMINSTER and COOPER), A., ii, 115.
- analysis of (GARCIA), A., ii, 345.
- estimation of (GARCIA), A., ii, 411.
- Hydrofluosilicic acid**, equilibria of (HUDLESTON and BASSETT), T., 403.
- Fluorine organic compounds**, catalytic hydrogenation of (SWARTS), A., ii, 657.
- Fluorine estimation**:-
- estimation of (TRAVERS), A., ii, 70.
- estimation of, gasometrically (SZR), A., ii, 708.
- Fluorite**, formation of (WETZEL), A., 554.
- Fluorosulphonic acid**, equilibrium formation of (TRAUBE and REUEKE), A., ii, 539.
- Fomes igniarius*, enzyme action (SCHMITZ), A., i, 703.
- Foods**, detection and estimation lactic acid in (GRÜNHUT), A., 602.
- estimation of alkali and phosphate in (TILLMANS and BOHRMAN), A., ii, 348.
- estimation of zinc in (BODANSKY), A., ii, 656.
- Formaldehyde**, preparation of, from ethylene (WILLSTÄTTER and BERNER), A., i, 93.
- photosynthesis of (BALY, HEILBRUNN and BARKER), T., 1025.
- distillation of aqueous solution (WILKINSON and GIBSON), A., i, 347.
- adsorption of, by animal charcoal (MOELLER), A., ii, 304.
- condensation of acetone with (MILNE), A., i, 542.
- condensation of carbamide and (LAER), A., i, 499.
- action of, on gelatin (MOELLER), i, 693.
- action of, with Grignard reagent (ZIEGLER), A., i, 394; (KRAUS), A., i, 647.
- condensation of, with α -nitrophenol (FISHMAN), A., i, 23.
- nitrogenous peroxide compounds (V. GIESEWALD and SIEGENS), 358.
- action of, on starch (SANDOW), MAYER), A., i, 400.
- behaviour of, in the animal organism (SALKOWSKI), A., i, 473.
- sulphoxylate, action of oxidising agent on (BINZ and HABERLAND), detection of (COHN), A., ii, 663.
- detection of, colorimetrically (TARELLI), A., ii, 222.
- estimation of (KOLLO and LASCAR), A., ii, 526.
- Formaldehyde-2:4-dinitro-m-tolylhydrazone** (BRADY and BOWMAN), T., 403.
- Formaldehydephenylhydrazones**, nitro-, tautomeric, stability of (SHEWICK and EWBANK), T., 486, 491.
- Formamide**, synthesis of, from ammonia and carbon monoxide (MEYER ORTHNER), A., i, 775.
- oxidation of (FOSSE), A., i, 165.

- rnamidines, reactions of (DAINS, IRVIN, and HARREL), A., i, 362; (DAINS and LONG), A., i, 518.
 urmic acid, preparation of, and its allyl ester (COFFEY and WARD), T., 1303.
 pyrogenic decomposition of (MULLER and PEYTRAL), A., i, 156.
 physiological significance of (SLOSSE), A., i, 203.
 strontium salt, rotatory power of (LONGCHAMON), A., ii, 421.
 cornyl ester, preparation of (LUTTRINGER and DUBOSC), A., i, 115; (LUTTRINGER), A., i, 116.
 thyl ester, influence of neutral salts on the hydrolysis of (MANNING), T., 2079.
 arpiuyl ester, preparation of (LUTTRINGER), A., i, 116.
 etection of, in acetic acid (POLINSKI), A., ii, 136.
 etection of, in human blood (STEFF), A., i, 203.
 etection of, in presence of oxalic and tartaric acids (KRAUSS and TAMPKE), A., ii, 466.
 timation of, in blood (STEFF and ZUMBUSCH), A., i, 331.
 nic acid, chloro- (*chlorocarbonic acid*), ethyl ester, action of, on alkaloïds (GADAMER and KNOCH), A., i, 579.
 bromomethyl esters, toxicity of (MAYER, MAGNE, and PLANTEFOL), A., i, 147.
 myl- α -diphenylpropionic acid, ethyl ester (WISLICIENUS and v. SCHRÖTTER), A., i, 673.
 ylmethylhomopiperonylamine (MERCK), A., i, 341.
 ylnorvalines (ÄRDERHALDEN and RTEN), A., i, 547.
 yphenylacetic acid, esters, isomorphism of (WISLICIENUS and v. SCHRÖTTER), A., i, 672.
 myl- α -phenyl-n-butyric acid, ethyl ester (WISLICIENUS and v. SCHRÖTTER), A., i, 673.
 - α -phenylpropionic acid, ethyl ester (WISLICIENUS and v. SCHRÖTTER), A., i, 672.
 -phenylsuccinic acid, ethyl ester (WISLICIENUS and v. SCHRÖTTER), A., i, 673.
 eridine (MERCK), A., i, 341.
 use of, in detection and estimation of nitric acid (ANON.), 558.
 distilling columns in vacuum distillation (SMITH), A., ii, 575.
 Freezing point, apparatus for determination of (WILHELM and FINKELSTEIN), A., ii, 574.
 relation between critical temperature and (PRUD'HOMME), A., ii, 84, 376.
 depression of, in strong solutions (CERNATESCO), A., ii, 578.
 of aqueous solutions of electrolytes (KLEIN and SVANBERG), A., ii, 375.
 Freezing points of organic compounds (TIMMERMANS), A., ii, 430, 431; (TIMMERMANS and MATTAAR), A., ii, 622.
 Friedel and Crafts' reaction (COPISAROW), T., 442, 1806.
 effect of carbon disulphide on the (MONTAGNE), A., i, 348.
 with oxalyl chloride (STAUDINGER, SCHLENKER, and GOLDSTEIN), A., i, 432, 433.
 Frogs, metabolism of the larvae of (PARNAS and KRASINSKA), A., i, 833.
 heart of. See Heart.
 brown. See *Rana fusca*.
 Fruit, estimation of carbohydrates in (MYERS and CROLL), A., ii, 465.
 Fruit juices, apparatus for reducing, to powder, without destruction of vitamins (McCLENDON), A., i, 839.
 detection of methyl anthranilate in (POWER), A., ii, 357.
 Fuel oils, preparation of, by hydrogenation of acetylene (ODA), A., i, 841.
 Fulminic acid, mercury salt, behaviour of, in various solvents (LANGHANS), A., i, 99.
 action of, on metals and alloys (LANGHANS), A., i, 652.
 reactions of, with sodium thio sulphate (F. II. and P. V. DUPRÉ), A., i, 232.
 detection of (LANGHANS), A., ii, 359.
 Fumaric acid, preparation of (WEHMER), A., i, 845.
 potassium hydrogen salt (ZSCHMEISTER and SZÉCSI), A., i, 158.
 Fungi, higher, chemistry of (ZELLNER), A., i, 212.
 thermophilic, metabolism of (NOACK), A., i, 294.
 Funnel, separating, for quantitative extractions (LUTHER), A., ii, 270.
 Furfuraldehyde, action of, on aniline bases and aromatic amino-acids (FISCHER, BALLING, and ALDINGER), A., i, 22.
 Furfurylethylamine, derivatives of (v. BRAUN and BRAUNSDORF), A., i, 773.

- 9-Furfurylfluorene**, 2:7-dibromo- (SIEGLITZ), A., i, 111.
- Furfurylidencamphor** (WOLFF), A., i, 514.
- 9-Furfurylidenefluorene**, 2:7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 782.
- Furnace**, combustion, for micro-analysis (DAUTWITZ), A., ii, 131.
gas combustion, for use in organic analysis (HEDLEY), T., 1242.
- "Furool green,"** and its derivatives (FISCHER and GRAHL), A., i, 42.
- Furoxans**, constitution of (WIELAND), A., i, 605.
- dl-β-2-Furyl-α-alanine** (SASAKI), A., i, 808.
- β-2-Furylethylamine**, and its derivatives (WINDAUS and DALMER), A., i, 118.
- β-2-Furylpropionic acid**, ethyl ester, and its derivatives (WINDAUS and DALMER), A., i, 117.
- 2-β-Furylvinylquinoline**, and its salts (WERNER), A., i, 54.
- Fuse-igniters**, estimation of nitrogen peroxide in the fumes produced by (MOIR), A., ii, 345.
- Fusion**, apparatus for (HODSMAN), A., ii, 345.
- G.**
- d-Galactonic acid**, amides of (VAN WIJK), A., i, 319.
- Galactonolactone**, preparation of (LEVENE and MEYER), A., i, 392.
- Galactose**, preparation of (CLARK), A., i, 647.
action of emulsin on (BRIDEL), A., i, 469.
fermentation of, by yeast (v. EULER and LAURIN), A., i, 642.
- Galactosephenylmethylhydrazones** (VOTOCER), A., i, 544.
- Galactosyl-glucosylselenide octa-acetate** (WREDE), A., i, 162.
- n- and iso-Galipine**, and their salts and derivatives (TROGMER and BÖNIGKE), A., i, 121.
- Gallic acid**, derivatives of (ALIMCHANDANI and MELDRUM), T., 201.
- Gallium**, purification and physical properties of (RICHARDS and BOYER), A., ii, 264.
- Gallium organic compounds** :—
acetylacetone (MORGAN and DREW), T., 1058.
ferrocyanide, use of, in analysis (PORTER and BROWNING), A., ii, 277.

Gallium separation :—

- separation of, from indium and zinc (BROWNING and PORTER), A., ii, 265.
- Gallotannic acid**, extraction of (KNAPE), A., i, 353.
- Gallotannin** (NIRRENSTEIN, SPIERS, and GEAKE), T., 275.
- Gas absorption apparatus** (WALZ), A., ii, 515.
- Gas analysis**, microchemical, by the Pirani pressure gauge (GENERAL ELECTRIC CO. LTD.), A., ii, 591.
physiological (TRENDELENBURG), A., ii, 460.
- Gas analysis apparatus** (TOUR), A., ii, 125.
technical (ANDOYER), A., ii, 704.
- Gas generation apparatus** (HAHN), A., ii, 634.
- Gas reactions**, influence of colloids on the kinetics of (FINDLAY and THOMAS), T., 170.
- Gases**, infra red absorption spectra of (IMES), A., ii, 4; (HETTNER), A., ii, 144.
luminous, spectra of (MERTON), A., ii, 2.
obliteration of the spectra of metals by (GIBSON and NOYES), A., ii, 610.
scattering of light in (BOHN and GERLACH), A., ii, 632.
temperature of radiation of (SAHA), A., ii, 162.
ionisation of (PINKUS and DE SCHUTTHRESS), A., ii, 368; (PINKUS), A., ii, 369.
by α-rays (HESS and HORNYAK), A., ii, 292.
- electric discharge** in (SCHULTZ), A., ii, 234.
absorption of, in the electric discharge (NEWMAN), A., ii, 295.
disappearance of, under the electric discharge (GENERAL ELECTRIC CO. RESEARCH STAFF), A., ii, 369, 533.
- separation of**, by the electric discharge (SKAUPY), A., ii, 154.
absorption of slow cathode rays by (MAYER), A., ii, 234.
specific heat of (HERZ), A., ii, 299, 678; (LEES), A., ii, 423; (DIXON, CAMPBELL, and PARKER; PARTINGTON), A., ii, 621; (THOMPSON), A., ii, 679.
- structure of the molecules of** (RANKINE), A., ii, 192; (KIRSCH), A., ii, 193.
- active cross-sections of the molecules of** (RAMSAUER), A., ii, 324.
- apparatus for measuring variation in the mass of**, with time (GENTZ), A., ii, 389.

- Gases**, apparatus for measurement of pressure and volume of (HÜTTIG), A., ii, 195.
 entropy of (LATIMER), A., ii, 380; (TOLMAN), A., ii, 381.
 equation of state for (LEDUC), A., ii, 429.
 evolution of, in solution, by changing the solvent (GENELIN), A., ii, 105.
 adsorption of (BRIGGS), A., ii, 624.
 by metallic catalysts (TAYLOR and STOTT), A., ii, 630.
 by silica gels (MILLER), A., ii, 169.
 molecular energy in (EWING), A., ii, 299.
 velocity of sound in (DIXON, CAMPBELL, and PARKER), A., ii, 621.
 ignition of (MORGAN and WHEELER), T., 239; (CHAPMAN), T., 1677.
 effect of oxygen on the inflammability of (TERRES), A., ii, 99.
 explosive mixtures of, and their behaviour at low pressures (STAVENHAGEN and SCHUCHARD), A., ii, 33.
 inactive, chemical affinity of (SKAUPT), A., ii, 198.
 liquefied inactive, latent heat of fusion of (NARBUTT), A., ii, 164.
 mixed, influence of ionising tension on chemical reactions in (SKAUPT), A., ii, 178.
 thermodynamics of (WAGNER), A., ii, 162.
 monatomic, diamagnetism of (PAULI), A., ii, 161.
 partly dissociated, motion of sound in (EINSTEIN), A., ii, 249.
 rare, in natural gases of Alsace-Lorraine (MOUREU and LÉPAGE), A., ii, 44.
 electric discharge in (SKAUPT), A., ii, 154.
 apparatus for detection of (LUDWIG), A., ii, 271.
Gastric juice, importance of hydrochloric acid in (MICHAELIS), A., i, 74.
 detection of lactic acid in (PITTARELLI), A., ii, 418.
Gastrin (KOCH, LUCKHART, and KEETON), A., i, 74.
Geesse, glycerides of the fat of (AMBERGER and BROMIG), A., i, 833.
Gelatin, electrical conductivity of mixtures of, with water (REITIG), A., ii, 10.
 conductivity of, and its effect on the conductivity of sodium chloride solutions (PALMER, ATCHILEY, and LOEB), A., ii, 534.
 effect of ions on the swelling of (LOEB), A., i, 137.
Gels, osmosis and swelling of (SMITH), A., i, 749.
 relation between the osmotic pressure and viscosity of (LOEB), A., i, 822.
 viscosity of (ALEXANDER), A., ii, 310.
 gels, elastic properties of (SHEPPARD and SWEET), A., ii, 311.
 hardening of, by formaldehyde (REINER), A., i, 67.
 equilibrium of, with hydrochloric acid (WINTGEN and KRÜGER), A., ii, 247.
 action of formaldehyde on (MOELLER), A., i, 693.
 hydrolysis of (NORTHROP), A., i, 823; ii, 541.
 amino-acids from (DAKIN), A., i, 66.
 commercial, gold number of (ELLIOT and SHEPPARD), A., ii, 720.
Gels, theory of (BRADFORD), A., ii, 577.
Gentian, preservation of preparations of (BRIDEL), A., i, 152.
Genitic acid, tetra-acetylglucose ester (KARRER, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 263.
Germanium, atomic weight of (MÜLLER), A., ii, 456.
Gibb's paradox, and quantum weight (SCHÜTTKY), A., ii, 179.
Ginseng, Corean, constituents of (KONDO and AMANO), A., i, 296.
Gishi-gishi, constituents of the root of (MURAYAMA and ITAGAKI), A., i, 760.
Glass, effect of radium, Röntgen, and ultra-violet rays on (CLARKE), A., ii, 599.
 devitrification of (GERMANN), A., ii, 262.
 solubility of gases in (WASHBURN, FOOTITT, and BUNTING), A., ii, 401.
 soda-lime, estimation of carbonates, chlorides, and sulphates in (IKAWA), A., ii, 706.
Glasswool, use of, in filtration (KOLTHOFF), A., ii, 409.
isoGlutamine. See *N*-Methylglutetamine methyl ether.
Glucal and its triacetate, constitution of (BERGMANN and SCHOTTE), A., i, 307.
Glucinum (*beryllium*) chloride and oxide, heats of formation of (MIELENZ and v. WARTEMBERG), A., ii, 487.
 sulphate, solubility of, in water and sulphuric acid (BRITTON), T., 1967.
 equilibrium in the system, potassium sulphate, water, and (BRITTON and ALLMAND), T., 1463.
Glucinum separation :—
 separation of aluminium from (BRITTON), A., ii, 657, 712.

- d*-Gluconic acid, amides of (VAN WIJK), A., i, 319.
- Glucosan, polymerisation of (A. and J. PICTET), A., i, 647, 766.
- potassium derivative (PICTET and CASTAN), A., i, 397.
- β -Glucosan (*l*-glucosan), preparation of, and its relationship to cellulose and to *d*-glucose (IRVINE and OLDHAM), T., 1744.
- Glucosazone-*pp*-dibenzoic acid, ethyl ester (THOMS and RIRSERT), A., i, 344.
- d*-Glucose. See Dextrose.
- α -Glucose, compounds of, with aliphatic acids (HESS, MESSMER, and KLETZL), A., i, 306.
- Glucose, substituted, phosphoric acid esters of, and their hydrolysis (LEVENE, MEYER, and WEBER), A., i, 845.
- Glucosides (P. and W. KARRER and CHAO), A., i, 259; (KARRER, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 260.
- digitalis (WASICKY), A., i, 295.
- from orchids (DELAUNY), A., i, 296.
- estimation of dextrose in (IONESCU), A., ii, 525.
- Glucosides. See also :—
- Glycyrrhizin.
- Quabain.
- Rhaponticin.
- Rhapontigenin.
- Strophanthin.
- α -Glucosidoglucose, and its phenyl-osazone (PICTET and CASTAN), A., i, 397.
- 5-Glucosidomannose, and its octa-acetate (BERGMANN and SCHOTTE), A., i, 649.
- β -*d*-Glucosidithiolacetic acid, and its tetra-acetyl derivative, ethyl ester (KARRER, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 262.
- 2-*B-d*-Glucosidoxy-5-methoxybenzoic acid, and its derivatives (KARRER, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 262.
- α -Glucosyl chloride (PICTET and CASTAN), A., i, 396.
- Glucosylglucosan (PICTET and CASTAN), A., i, 397.
- Gluce, vegetable (STERN), A., i, 226.
- Glutaconaldehyde, hydroxy-, di-*o*-nitro-anilide of (FISCHER, BALLING, and ALDINGER), A., i, 22.
- Glutaconic acid, α -bromo-, ethyl ester (FARMER and INGOLD), T., 2013.
- Glutaconic acids, chemistry of (INGOLD and THORPE), T., 492.
- Glutaric acid, and its bromo- and hydroxy-derivatives, and their derivatives (INGOLD), T., 318.
- Glutathione (FLOPKINS), A., i, 636.
- Glycæmia, production of, by adrenaline (BORNSTEIN), A., i, 289.
- Glycerides, constitution of (GRÜN and WITTKA), A., i, 220.
- Glycerol, production of, in alcoholic fermentation (SCHWEIZER), A., i, 757.
- action of boric acid on (DUBREISAY), A., i, 535.
- oxidation of, by *Bacillus subtilis* (AUBEL), A., i, 641.
- action of, on blood (SIMON), A., i, 204.
- $\alpha\beta$ -dibenzoate, and its salts (BERGMANN, BRAND, and DREYER), A., i, 446.
- sodium phosphate (BAILLY), A., i, 300.
- α -2:4-dinitrophenyl ether, and its diacetyl derivatives (FAIRBOURNE and Toms), T., 1037.
- estimation of, in wines (HEIDUSCHKA and ENGLERT), A., ii, 524.
- fermentation, estimation of (PLEISCHER), A., ii, 714.
- Glycerophosphates, estimation of phosphates in (LIZIUS), A., ii, 518.
- Glyceroxide, α -sodium (FAIRBOURNE and Toms), T., 1035.
- Glyceryl tribenzoate, and its nitro-derivatives (BERGMANN, BRAND, and DREYER), A., i, 446.
- trinitrate, estimation of the thermal stability of explosives containing (TALLANI), A., ii, 524.
- Glycine, preparation of, from malonic acid (CURTIUS and STEHR), A., i, 653.
- anhydride, condensation of aldehydes with (SASAKI), A., i, 196.
- and related compounds, detection of, colorimetrically (SASAKI), A., i, 353.
- Glycinin, amino-acids of (JONES and WATERMAN), A., i, 521.
- Glycogen, formation of, in the liver (LANGFELDT), A., i, 473.
- constitution of (KARRER and NÄGELI), A., i, 313; (KARRER), A., i, 707.
- storage of, in the liver and in muscle (GRUZEWSKA and FAURE-FREMIER), A., i, 699.
- Glycol, $C_{10}H_{22}O_2$, from oxidation of diamylene (SCHINDLMEISER), A., i, 491.
- Glycols, preparation of (ÖSTLING), A., i, 665.
- determination of position of hydroxy groups in (BOKSEKEN and HERMANS), A., i, 546.
- α -Glycols, aromatic substituted, de hydration of (LEVY), A., i, 860.
- Glycollaldehyde *p*-nitrophenylhydrazon (ROUGE), A., i, 911.

- Glycollic acid**, biochemical behaviour of (SIEBURG and VIETENSE), A., i, 145.
cellulose esters, and their derivatives (BARNETT), A., i, 847.
- Glycollic acid, thio-**. See Acetic acid, α -thiol.
- Glycolysis** in blood, arrest of (AMBERD), A., i, 204.
- Glycosuria**. See Diabetes.
- Glycylcholine**, and its salts (DUDLEY), T., 1256.
- Glycyl-d-leucylglycyl-l-leucine** (ABDERHALDEN and HANDOVSKY), A., i, 547.
- Glycylornithine** (ABDERHALDEN and KÜRTEN), A., i, 548.
- Glycyrrhetic acid**, and its derivatives (P. and W. KARRER and CHAO), A., i, 259.
- Glycyrrhizin** (P. and W. KARRER and CHAO), A., i, 259.
- Glyoxal**, preparation of (KINDLER), A., i, 396.
action of alkalis on (HOMOLKA), A., i, 544.
- Glyoxalase** in beri-beri (FINDLAY), A., i, 478.
- β -Glyoxaline-4-propionic acid**, α -chloro-, and its ethyl ester oxalates (FARGHER and PYMAN), T., 735.
- 2-(2'-Glyoxalyl)quinoline**, and its salts (SMIRNOV), A., i, 813.
- Glyoxime peroxides**. See Furoxans.
- Glyoxylic acid**, ethyl ester, hydrazones and phenylsemicarbazide (STAUDINGER, HAMMET, and SIEGWART), A., i, 327.
- Glyoxyliurea**. See Dehydrohydantoic acid.
- Gold, Z-series spectrum** of (DAUVILLIER), A., ii, 669.
ultra-violet spark spectrum of (L. and E. BLOCH), A., ii, 364.
diffusion velocity of, into silver (FRAENKEL and HOUBEN), A., ii, 491.
mixed crystals of silver and (TAMMANN), A., ii, 173.
volatilisation of thorium-B and -C from (LORIA), A., ii, 294.
precipitation of, on the surface of colloids (BÖRJESEN), A., ii, 27.
colloidal, soaps as protective colloids for (IREDALE), T., 625.
particles, colour and Brownian movement of (FÜRTH), A., ii, 243.
sols (v. KNAFFL-LENZ), A., ii, 342.
saponin as protective colloid to (GUTHRIE, HUBER, and HAUG), A., ii, 538.
- Gold alloys** with copper and silver (TAMMANN), A., ii, 647.
- Gold alloys** with mercury, structure of (BRALEY and SCHNEIDER), A., ii, 406.
with palladium, use of, for crucibles (WASHINGTON), A., ii, 194.
- Gold haloids**, action of acetylene on (KINDLER), A., i, 296.
- Gold estimation**:—
analysis of (WOLFF and SINGALOWSKY), A., ii, 66; (SMIT), A., ii, 354.
estimation of, electrolytically, and its separation from copper, palladium, and platinum (TREADWELL), A., ii, 416.
- Gold beaters' skin membranes**, osmosis with (BARTELL and MADISON), A., ii, 90.
- Graphite**, solubility of, in molten iron (RUE and BIRN), A., ii, 193.
- Graphitic acid** (HULETT and NELSON), A., ii, 399.
- Grignard reagents**, mechanism of the action of (MEISENHEIMER and CASPER), A., i, 654.
reducing action of (ILLES and RHEINBOLDT), A., i, 777.
oxidation of (PORTER and STEEL), A., i, 140.
action of formaldehyde with (ZIEGLER), A., i, 394; (KRAUSE), A., i, 647.
action of, on organic iodine compounds (HEPWORTH), T., 1244.
action of, on nitric esters (HEPWORTH), T., 251.
action of, on organic sulphur compounds (HEPWORTH and CLAPHAM), T., 1188.
- Guanidine**, preparation of (DAVIS), A., i, 321.
conversion of, into cyanamide (PELLIZARI), A., i, 403.
salts, preparation of (HOFWIMMEN), A., i, 320.
preparation of, and nitro- (EWAN and YOUNG), A., i, 500.
carbonate, use of, as a standard alkali (DODD), A., ii, 409.
dimalonate-diisocyanate (WEINLAND and STERP), A., i, 538.
- Guarana**, estimation of caffeine in (UGARTE), A., ii, 470.
- Gum, Karaya**, viscosity of (ALEXANDER), A., ii, 310.
- Guttameter**, new (ESCHBAUM), A., ii, 489.
- Gypsum**, colloidal chemistry of (OSTWALD and WOLSKI), A., ii, 47.
reduction of (RIESENFELD, FELD, and HESSE), A., ii, 41.

H.

- Hæmatoporphyrin** (KÜSTER), A., i, 200.
- Hæmocyanin** (DHÉRE and SCHNEIDER), A., i, 625; (DHÉRE), A., i, 626.
properties of (QUAGLIARIELLO), A., i, 467.
compound of nitric oxide with (DHÉRE and SCHNEIDER), A., i, 366.
- Hæmoglobin**, physico-chemical properties of (CAMIE), A., i, 321.
influence of ions on (STRAUB and MEIER), A., i, 72.
adsorption of carbon dioxide by (BUCKMASTER), A., i, 632.
reduced, absorption spectrum of (HÄRI), A., ii, 287.
estimation of, in blood (BIRKER), A., ii, 720.
- Hæmolysis**, oligodynamic. See Oligodynamic hæmolysis.
- Hæmolytic activity**, estimation of (PONDER), A., i, 905.
- Halotis gigantea* (ear-shell), proteins of the muscle of (TAKAHASHI), A., i, 832.
- Halogens**, absorption of light by (DORRIS and FOX), A., ii, 566.
and their compounds, molecular volumes of (BILTZ), A., ii, 437.
replacement of, in ring compounds (ROSENMUND and HARMS), A., i, 103; (ROSENMUND), A., i, 370.
removal of, from organic compounds (HEDELICUS), A., ii, 182.
action of, on tissues (LO MONACO), A., i, 216.
- Halogenation** (DATTA and BHUOMIK), A., i, 331.
- Halogens cyanides**, reaction between sodium thiosulphate and (KURTENACKER; KURTENACKER and FRITSCH), A., ii, 502.
- Halogens hydrides**, ultra-red rotation spectra of (KRATZER), A., ii, 142.
action of arylhydroxylamines with (BAMBERGER), A., i, 723.
- Halogens organic compounds**, reduction of (BRAND), A., i, 783, 785; (BRAND and KERCHER), A., i, 787.
- Harmaline** (KERMACK, PERKIN, and ROBINSON), T., 1602.
- Harmine** (KERMACK, PERKIN, and ROBINSON), T., 1602.
- Heart**, effect of sodium chloride solutions on alcoholic extracts of (MÜLLER), A., i, 830.
frog's, effect of replacement of chlorides in Ringer's solution on the (FINCKH), A., i, 830.
- Heat**, latent, of liquids (HAMMICK), A., ii, 84.
specific (PADOA), A., ii, 15.
at low temperatures (GÜNTHER), A., ii, 16.
and atomic structure (SKAUP), A., ii, 300.
of gases (HERZ), A., ii, 299, 678; (LEES), A., ii, 428; (DIXON, CAMPBELL, and PARKER), A., ii, 621; (THOMPSON), A., ii, 679.
of aqueous salt solutions (JAUCH), A., ii, 375.
of organic liquids (TRÉHIN), A., ii, 237.
of saturated vapours (ARIÈS), A., ii, 17.
- Heat of combustion** in relation to constitution (BINDER), A., ii, 435.
of nitro-compounds (GARNER and ABERNETHY), A., ii, 435.
- Heat of dissociation** of metallic haloids (v. WEINBERG), A., ii, 165.
- Heat of formation** (SWIENTOSLAWSKI), A., ii, 535.
of nitro-compounds (GARNER and ABERNETHY), A., ii, 435.
- Heat of fusion**, latent, of liquefied inactive gases (NARBUTT), A., ii, 164.
- Heat of hydration** of ions (BORX), A., ii, 166.
- Heat of mixture** (CASSEL), A., ii, 166.
- Heat of sublimation** of alkali haloids (REIS), A., ii, 166.
- Heat of vaporisation**, latent (RIGHEL), A., ii, 431; (THOMPSON), A., ii, 679.
and critical constants (HERZ), A., ii, 301.
and surface tension (HERZ), A., ii, 301.
- Heat value**, calculation of, from constitution (BINDER), A., ii, 241.
- Heating coils**, construction of (SLICH), A., ii, 299.
- Helium**, structure of the atom of (KEMBLE), A., ii, 478, 632; (LANGMUIR), A., ii, 689.
chemistry and chief sources of (ROGERS), A., ii, 697.
synthetic, possible origin of (LO SURDO), A., ii, 331.
spectrum of (COMPTON and LILLY), A., ii, 2.
ultra-violet spectrum of (FRICKE and LYMAN), A., ii, 362.
effect of an electric field on the spectrum of (YOSHIDA), A., ii, 139.
existence of nuclei of, in radioactive nuclei (BRÜSSLERA), A., ii, 366.
ionisation and radiation in, and the structure of its atoms (HORTON and DAVIES), A., ii, 672.

- Helium**, resonance and ionisation potentials of (FRANCK and KNIPPING), A., ii, 150.
- mobility of ions in (McLENNAN and EVANS), A., ii, 478.
- new isotope of (SMEKAL), A., ii, 478.
- inflammability of mixtures of hydrogen and (LEDIG), A., ii, 111.
- Hemellithenol** ethers. See Phenyl-3:4:5-trimethyl ethers.
- Hemicellulases** in resting seeds (RIEDEL), A., i, 912.
- Hepta-acetylmaltosido-dl-mandelic acid** (KARKER, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 263.
- Heptadecaclophenic acid** (ASCHAN), A., i, 513.
- Heptamethyl methylcellubioside** (HAWORTH and HIRST), T., 199.
- Heptamethyl-β-methylcellulose** (KARKER and WIDMER), A., i, 311.
- Heptane**, physical constants of (E. and R. KREMERS), A., i, 705.
- melting point of (DE FORCHAND), A., ii, 85.
- 1,2-cycloHeptanediols**, preparation and derivatives of (BOESEKEN and DERX), A., i, 663.
- cycloHeptenylacetone**, and its semicarbazone (KON), T., 827.
- Heterocyclic compounds**, preparation of carboxylic acids from (ROSENKUND and STRUCK), A., i, 176.
- Hexadecaclophenic acid**, and its silver salt and acetyl derivative (ASCHAN), A., i, 512.
- Δ⁸Hexadiene-α,ε-dicarboxylic acid** (WILLSTÄTTER and BONMER), A., i, 123.
- Hexahydrocymene**, 1:2-diamino-, and its hydrochloride (WIELAND and REINDEL), A., i, 554.
- Hexahydroferrocyanic acid**, metallic salts (LECK), A., i, 232.
- 2:4:6:2':4':6'-Hexamethoxydiphenylnitric oxide** (MEYER and REPPE), A., i, 237.
- pp'p''Hexamethyltriaminotriphenylarsine** dioxihydroxide, and its derivatives (ZUCKERKANDL and SINAI), A., i, 902.
- Hexamethyldipyridyl**, and its monohydrate (MEYER and HOFMANN-MEYER), A., i, 739.
- Hexamethylenetetramine**, constitution of (HAHN and WALTER), A., i, 651.
- action of hydrogen peroxide on (v. GISENEWALD and SIEGENS), A., i, 316.
- preparation of derivatives of (RIEDEL, AKT.-GES.), A., i, 14, 774; (RIEDEL, AKT.-GES., and BOEDECKER), A., i, 774.
- Hexamethylenetetramine**, compounds of, with metallic salts and acids (RAY and SARKAR), T., 390.
- compounds of, with phenols (HARVEY and BAEKELAND), A., i, 239.
- Hexamethyl methylcellubioside** (HAWORTH and HIRST), T., 198.
- Hexamethyl methylcellulose** (KARKER and WIDMER), A., i, 311.
- Hexamethylpentamethylenediammonium hydroxide** (ACKERMANN and KUTSCHER), A., i, 499.
- Hexamethyltritelluronium dioxide, diiodo-** (VERNON), T., 689.
- Hexaminocobaltiferrocyanide** (EPHRAIM and MOSIMANN), A., ii, 310.
- cycloHexane**, photochemical reaction between bromine and (NODDACK), A., ii, 568.
- preparation of derivatives of (OSTERBERG and KENDALL), A., i, 101.
- action of, on blood (LAUNOY and LEY-DEUHI), A., i, 204.
- isoHexane**, synthesis of (VAN RISEGHEM), A., i, 489.
- cycloHexane-1-acetic-1-carboxylic acid**, and its silver salt and derivatives (NORRIS and THORPE), T., 1206.
- cycloHexanespiro-4-bromocyclohexane-3:5-dione** (NORRIS and THORPE), T., 1208.
- cycloHexanespiro-4:4-dibromocyclohexane-3:5-dione** (NORRIS and THORPE), T., 1209.
- cycloHexanecarboxyl bromide** and chloride, bromo- (FOURNEAU, MONTAGNE, and PUYAL), A., i, 566.
- cycloHexanecarboxylamide**, bromo- (FOURNEAU, MONTAGNE, and PUYAL), A., i, 568.
- cycloHexanecarboxylcarbamide**, bromo- (FOURNEAU, MONTAGNE, and PUYAL), A., i, 568.
- cycloHexanecarboxylic acid**, derivatives of (FOURNEAU, MONTAGNE, and PUYAL), A., i, 566.
- cycloHexanespiro-4-chloro-4-bromocyclohexane-3:5-dione** (NORRIS and THORPE), T., 1210.
- cycloHexanespiro-4-chlorocyclohexane-3:5-dione** (NORRIS and THORPE), T., 1209.
- cycloHexanespiro-4:4-dichlorocyclohexane-3:5-dione** (NORRIS and THORPE), T., 1209.
- cycloHexanespiro-2:3 dicyanocyclopropane-2-carboxylic acid**, and its amide (BIRCH, GOUGH, and KON), T., 1324.
- cycloHexanespiro-2:3 dicyanocyclopropane-2:3-dicarboxylic acid**, and its anhydride (BIRCH, GOUGH, and KON), T., 1327.

- cyclo*Hexanespiro-2-cyanocyclopropane-2:3:3-tricarboxylic acid (BIRCH, GOUGH, and KON), T., 1323.
- cyclo*Hexane-1:1-diacetic acid (NORRIS and THORPE), T., 1206.
- cyclo*Hexane-1:1-dicarboxylic acid, ethyl ester (DOX and YODER), A., i, 740.
- cyclo*Hexane-1:4-dione-2:3-dicarboxylic acid, methyl ester, and its derivatives (HEUPFICH), A., i, 185.
- cyclo*Hexanespirocyclohexane-3:5-dione, and its anilide (NORRIS and THORPE), T., 1205.
- cyclo*Hexanespirocyclohexane 3:5-dione-2-carboxylic acid, ethyl ester (NORRIS and THORPE), T., 1204.
- cyclo*Hexane-1:5-spiro-2-imino-4:6-diketohexahydropyrimidine (DOX and YOUNG), A., i, 741.
- cyclo*Hexanespirocyclopropane-2:3-dicarboxylic acid, and its nitrile (BIRCH, GOUGH, and KON), T., 1325.
- cyclo*Hexane-1:5-spiro-2:4:6-triketohexahydropyrimidine (DOX and YODER), A., i, 740.
- cyclo*Hexanol, formation of, from phenol (VAYON and DETRIE), A., i, 505.
- cyclo*Hexanol, 2-amino-, and its salts (OSTERBERG and KENDALL), A., i, 101.
- cyclo*Hexanone-*p*-acetylaminophenyl-hydrazone (PERKIN and PLANT), T., 1833.
- cyclo*Hexanone-2-chloro-5-nitrophenyl-hydrazone (PERKIN and PLANT), T., 1837.
- Hexaphenyldi-phosphonium bromide (STEINKO F and BUCHHEIM), A., i, 470.
- Δ^2 -*cyclo*Hexenones, polymerisation of (RUZICKA), A., i, 34.
- Hexoic acid (*caproic acid*), α -glucose ester (HESS, MESSMER, and KLETZL), A., i, 306.
- n*-Hexoic acid, *d*- and *l*- α -amino-, ethyl esters, and their hydrochlorides (MARVEL and NOYES), A., i, 16.
- ϵ -amino-, and its benzoyl derivative, ethyl esters and lactams (RUZICKA, SEIDEL, and HILTON), A., i, 591.
- iso*Hexoic acid, α -chloro-, ethyl ester (KODAMA), A., i, 220.
- γ -Hexolactons (WINDAUS and KLÄNHARDT), A., i, 392.
- Hexosamic acids, optical rotation of (LEVENE), A., ii, 613.
- Hexoylcarbamide, α -bromo- (TIFFENEAU and ARDELY), A., i, 775.
- n*-Hexoyl chloride, α -bromo- (MARVEL and NOYES), A., i, 16.
- n*-Hexylglycine, α -amino-, α -bromo-, and α -hydroxy-, and their derivatives (MARVEL and NOYES), A., i, 16.
- l*-*iso*Hexoylglycyl-*l*-leucine, α -bromo- (ABDERHALDEN and HANDOVSKY), A., i, 547.
- iso*Hexyl alcohol, β -amino-. See *l*-Leucinol.
- cyclo*Hexylamine, 2-bromo-, 2-chloro-, and 2-chloro-cyano-, and their salts and acetyl derivatives (OSTERBERG and KENDALL), A., i, 101.
- cyclo*Hexylaniline, salts of (FOUQUE), A., i, 555.
- 5-*cyclo*Hexyl-2:2-diethylhydridene (FLEISCHER and SIEFERT), A., i, 255.
- 5-*cyclo*Hexyl-2:2-diethylindane-1:3-dione (FLEISCHER and SIEFERT), A., i, 254.
- cyclo*Hexylethane- $\alpha\beta$ -dicarboxylic acid, 1-hydroxy-, derivatives of (BIRCH, GOUGH, and KON), T., 1326.
- cyclo*Hexylethane- $\alpha\beta\delta$ -tricarboxylic acid, 1-hydroxy-, lactone and silver salt of (BIRCH, GOUGH, and KON), T., 1326.
- cyclo*Hexylethylaniline (FOUQUE), A., i, 556.
- N*-*cyclo*Hexylmalonic acid, 2-chloro- (OSTERBERG and KENDALL), A., i, 101.
- α -*cyclo*Hexylpropane, $\delta\delta\gamma$ -tribromo- (LESPIEAU), A., i, 656.
- γ -*cyclo*Hexyl- $\Delta\alpha$ -propene, δ -bromo- (LESPIEAU), A., i, 656.
- γ -*cyclo*Hexyl- $\Delta\alpha$ -propinene, and its silver derivative (LESPIEAU), A., i, 656.
- β -*cyclo*Hexylstyrene (REICH, VAN WILCK, and WAELLE), A., i, 333.
- cyclo*Hexylurethane (PUYAL and MONTAGNE), A., i, 108.
- Hippuric acid, formation and excretion of, in the human organism (SWAPPER), A., i, 831.
- synthesis of, in the animal organism (LEWIS), A., i, 382.
- glucose ester (HESS, MESSMER, and KLETZL), A., i, 306.
- estimation of, in urine (KINGSBURY and SWANSON), A., ii, 662.
- Histamine. See 4-Ethylglyoxaline, β -amino-.
- Histidine, benzoyl derivatives (GERSGROSS), A., i, 57.
- estimation of (THRUN and THORNBIDGE), A., ii, 225.
- History of Chinese chemistry (WANG), A., ii, 39.
- Hofmann reaction in relation to steric hindrance (BUNING), A., i, 520.
- application of, to substituted phthalimides (MOORE, MARACK, and PROUD), T., 1786.
- Homocampholyl alcohol, α -amino-, and its salts (PALFRAY), A., i, 418.

- Homocamphoric acid**, ethyl ester, preparation and sodium condensation of (RUZICKA and KUHN), A., i, 36.
- Homochemical compounds** (v. WEI-MARN), A., ii, 37, 324.
- Homocincholeupone**, and its salts (KOENIGS and OTTMANN), A., i, 596.
- Homologous series**, variation of physical properties in (CUI), A., ii, 428; (TAMMANN), A., ii, 429.
- Homomorpholine** (v. BRAUN and BRAUNSDORF), A., i, 435.
- Homonicotinic acid**, ethyl ester, and its derivatives (RABE and JANTZEN), A., i, 438.
- cis*-**Homophthalatodiethylenediamine-cobaltic salts** (DUFF), T., 1986.
- Homopilocarpic acid**, and its derivatives (RUZICKA and TREBLER), A., i, 37, 796.
- Homopiperonylethylaminomethanol** (ROSENMUND), A., i, 537.
- Homopiperonylmethylaminomethanol** (ROSENMUND), A., i, 587.
- Homopiperonylphenyl- α -naphthyl-methylarsonium salts** (BURROWS and TURNER), T., 434.
- Horn**, composition of (UNNA), A., i, 637.
- digestion of**, with alkalis (LANGECKER), A., i, 137.
- Horse**. See *Caballus equus*.
- Hugo Müller Lecture** (MOORE), T., 1555.
- Humic acid**, preparation and fractionation of (BECKLEY), A., i, 227.
- Humic acids**, structure of (MARCUSSEON), A., ii, 590.
- synthesis of (MARCUSSEON), A., i, 313; (ELLER), A., i, 506.
- Humin**, formation of, by protein hydrolysis (HOLM and GORTNER), A., i, 65.
- Humins**, synthesis of (MARCUSSEON), A., i, 813.
- Humus**, formation of (BECKLEY), A., i, 227.
- Humus acids** (ODÉN), A., i, 393.
- Hydantoin**, 5-bromoamino-5-hydroxy- (BILTZ and ROBL), A., i, 893.
- 5-hydroxy- (BILTZ and ROBL), A., i, 815.
- ψ -thio-, and its salts and derivatives (SCHMIDT), A., i, 100.
- Hydantoins**, preparation of (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618, 619.
- Hydrazine**, derivatives of (ROSEN-MUND), A., i, 587.
- Hydrates**, existence of, in aqueous solutions (SMITS, VAN DER LANDE, and BOUMAN), A., ii, 385.
- crystalline. See Crystal hydrates.
- Hydrazine**, action of chloral hydrate with (KNÖPPER), A., i, 158.
- Hydrazine**, action of nitrous acid with (OLIVERI-MANDALA), A., ii, 694.
- action of nitriles with (MÜLLER and HERRDEGEN), A., i, 741.
- Hydrazines**, preparation of (THOMPSON), A., i, 133.
- optically active, preparation of (GLATTFIELD and MILLIGAN), A., i, 63.
- Hydrazines**, amino- (FRANZEN and STEINFÜHRER), A., i, 463.
- Hydrazinedithiocarbonamides** containing sulphur, ring closure in (ARNDT and MILDE), A., i, 813.
- Hydrazinedithiocarbonamide**, benzyl and methyl ethers, and their derivatives (ARNDT and MILDE), A., i, 813.
- Hydrazinedithiocarbophenylamide** dimethyl ether (ARNDT and MILDE), A., i, 815.
- 5-Hydrazinoaniline**, 2,4-dinitro- (BORSCHKE), A., i, 461.
- 4-Hydrazinobenzoic acid**, ethyl ester, and its hydrochloride (THOMS and RITSERT), A., i, 344.
- 4-Hydrazinobenzoic acid**, 3-nitro-, ethyl ester (BORSCHKE), A., i, 461.
- 4-Hydrazinobenzonitrile**, 3-nitro-, and its derivatives (BORSCHKE), A., i, 460.
- 5-Hydrazinodimethylaniline**, 2,4-dinitro- (BORSCHKE), A., i, 461.
- 4-Hydrazino-3:5-dimethylisoxoxazole**, and its nitrobenzylidene derivative (MORGAN and BURGESS), T., 1548.
- 5-Hydrazinodiphenylamine**, 2,4-dinitro- (BORSCHKE), A., i, 461.
- 5-Hydrazino-4'-hydroxyazobenzene**, 2,4-dinitro- (BORSCHKE), A., i, 463.
- Hydrazinomaleonic acid**, potassium salt (CURTIUS and SIEBER), A., i, 653.
- Hydrazinomethylmaleonic acid**, potassium salt (CURTIUS and SIEBER), A., i, 653.
- 5-Hydrazinophenol**, 2,4-dinitro-, and its acetyl derivative (BORSCHKE), A., i, 462.
- 5-Hydrazinophenylacetic acid**, 2,4-dinitro-, ethyl ester (BORSCHKE), A., i, 462.
- 5-Hydrazinophenylmaleonic acid**, 2,4-dinitro-, ethyl ester (BORSCHKE), A., i, 462.
- Hydrazobenzene**, 5-chloro-2,4-dinitro- (GIUA), A., i, 551.
- Hydrazole acid**. See Azoimide.
- Hydrazones** (GERHARDT), A., i, 746.
- constitution of (STAUDINGER and HAMMETT), A., i, 324.
- 1-Hydrazotetrahydronaphthalene** (TETRALIN G. m. b. H.), A., i, 406.
- m-p*-**Hydrazotoluene**, 4:6-dinitro- (GIUA and ANGELETTI), A., i, 557.

- Hydrindene**, and its derivatives (BORSCHKE and POMMER), A., i, 168.
- Hydrindene-carboxylic acid**, aminophenylated, and its salts and derivatives (CHEMISCHE WERKE GRENZACH, AKT.-GES.), A., i, 28.
- Hydrindene-2-carboxylic acid**, 7-chloro-1-imino-, ethyl ester (KENNER and WITHAM), T., 1459.
- Hydrindene-5-carboxylic acid**, anilide and nitrile (BORSCHKE and POMMER), A., i, 169.
- Hydrindones**, 5- and 7-chloro-, and their derivatives (KENNER and WITHAM), T., 1459.
- 5-Hydrindyl anilinomethyl ketone** (BORSCHKE and POMMER), A., i, 169.
- Hydriodic acid**. See under Iodine.
- Hydrobenzamide**, catalytic reduction of (MIGNONAC), A., i, 129.
- Hydrobenzoin transposition** (TIFFENEAU and OREKHOFF; BILLARD), A., i, 565; (OREKHOFF and TIFFENEAU), A., i, 566.
- Hydrobromic acid**. See under Bromine.
- Hydrocarbon**, $C_{10}H_{16}$, and its derivatives, from *Andropogon Javanicus* (SIMONSEN), T., 1649.
- $C_{14}H_{18}$, attempted synthesis of (R. and W. MEYER and TAEGER), A., i, 20.
- $C_{15}H_{18}$, from pyrogenic distillation of 1-phenylindene (MAYER, SIEGLITZ, and LUDWIG), A., i, 555.
- $C_{15}H_{18}$, and its derivatives, from cadene heated with sulphur (RUZICKA and MEYER), A., i, 573.
- $C_{20}H_{30}$, from distillation of potassium Δ^4 -dihydronaphthoate with slaked lime (STRAUS and LEMMEL), A., i, 171.
- $C_{26}H_{40}$, from the action of light on $\alpha\beta\delta$ -tetraphenyl- $\Delta^{\alpha\beta\gamma}$ -butatriene (BRAND), A., i, 784.
- Hydrocarbons**, specific dispersion of (DARMOIS), A., ii, i, 361.
- decomposition of, by canal rays (KOHLSCHÜTTER and FRUMKIN), A., i, 405.
- narcotic properties of (FÜHNER), A., i, 478.
- acetylenic, preparation of (LESPIEAU), A., i, 656.
- preparation of sodium derivatives of (PICON), A., i, 645.
- aliphatic, oxidation of, by nitrogen peroxide (GRANACHER), A., i, 2.
- aliphatic halogenated, catalytic decomposition of (MAILHE), A., i, 534.
- aromatic, refractive indices of (EISENLOHR), A., ii, 1.
- molecular refraction of (V. STEIGER), A., ii, 473.
- Hydrocarbons**, aromatic, oxidation of, under pressure (SCHRADER), A., i, 329.
- action of carbon monoxide and hydrochloric acid on, in presence of catalysts (KORCZYŃSKI and MROZIŃSKI), A., i, 567.
- coupling of diazo-compounds with (MEYER and TOCHTERMANN), A., i, 895.
- estimation of, in hydrocarbon mixtures (TIZARD and MARSHALL), A., ii, 280.
- hydroaromatic polycyclic, preparation of (TETRALIN G. m. b. H.), A., i, 409.
- Hydrocarbostyryl-3-carboxylic acid**, resolution of, and its quiddine salt (LEUCHS), A., i, 442.
- Hydrocellulose**, differentiation of, from oxycellulose (SCHWALBE and BECKER), A., i, 303.
- Hydrocelluloses**, constitution of (OST and BRETSCHNEIDER), A., i, 711.
- Hydrochloric acid**. See under Chlorine.
- Hydrocuprean**, and its salts (GIEMSA and HALBERKANN), A., i, 582.
- Hydrocupreene**, and its dihydrochloride (GIEMSA and HALBERKANN), A., i, 584.
- Hydrocupreine**, amino- (BOEHNINGER and SOHNE), A., i, 515.
- Hydrocupreine-5-diazoanhydride**, and its hydrochloride (GIEMSA and HALBERKANN), A., i, 582.
- Hydrocyanic acid**. See under Cyanogen.
- Hydrocyanodi-m-tolylcarbodi-imide** (BONNEFOY and MARTINET), A., i, 194.
- Hydroelectric pile**, theory of (DÉCOMBE), A., ii, 676.
- Hydrofluoric acid**. See under Fluosine.
- Hydrofluosilicic acid**. See under Fluosine.
- Hydrogen atoms**, structure of (LEBRUN), A., ii, 102.
- and the atomic ether (ZEHNDER), A., ii, 191.
- preparation of, from water-gas (CLAUDE), A., ii, 692.
- spectrum of (GEHRCKE and LAV), A., ii, 565.
- positive ray spectrum of (VIGARD; THOMSON), A., ii, 285.
- vacuum line spectra of (WOOD), A., ii, 665; (McLENNAN and LOWE; BIGGE), A., ii, 666.
- ultra-violet dispersion of (KIRN), A., ii, 285.
- influence of an electric field on the spectrum of (KRAMERS; YOSHIDA), A., ii, 139.

- Hydrogen**, photochemical reaction of chlorine with (BALY and BARKER), T., 653.
- radiation and ionisation potentials of (COMPTON and OLMSTEAD), A., ii, 368.
- ionisation and dissociation of (KRÜGER), A., ii, 236.
- overvoltage of (MACINNIS), A., ii, 11.
- molecular heat of (MACDOUGALL), A., ii, 238.
- isothermals of (HOLBORN), A., ii, 15.
- rectilinear diameter of (MATHIAS, CHOMMELIN, and ONNES), A., ii, 266.
- absorption of, by palladium (FIRTH), T., 1120; (MAXTED), T., 1280.
- atoms, liberation of, from elements by the action of α -particles (RUTHERFORD and CHADWICK), A., ii, 671.
- influence of negative groups on the reactivity of (GUPTA), T., 298.
- combustion of (v. WARTENBERG and STEIG), A., ii, 108.
- explosion of air and (BONE and HAWARD), A., ii, 628.
- inflammability of mixtures of helium and (LEDIG), A., ii, 111.
- inflammation point of mixtures of oxygen and (FIESSEL), A., ii, 317.
- action of carbon monoxide and, with metallic oxides (CHAUDRON), A., ii, 584.
- Hydrogen alloys** with palladium, conductivity of (SMITH), A., ii, 423.
- Hydrogen arsenide**. See Arsenic trihydride.
- bromide. See Hydrobromic acid under Bromine.
- chloride. See Hydrochloric acid under Chlorine.
- cyanide. See Hydrocyanic acid under Cyanogen.
- fluoride. See Hydrofluoric acid under Fluorine.
- haloids. See Halogen hydrides.
- iodide. See Hydriodic acid under Iodine.
- peroxide, pure, properties of (MAASS and HATCHER; MAASS and HERZBERG), A., ii, 106.
- decomposition of, by ultra-violet light (KORNFELD), A., ii, 670.
- partition of, between water and ether (DE KOLOSOVSKY), A., ii, 440.
- catalytic decomposition of (WIELAND), A., i, 890; (BOHNSON), A., ii, 250; (LOCASOLANO), A., ii, 251; (PHRAGMÉN), A., ii, 499.
- Hydrogen peroxide**, velocity of decomposition of (BÜRKI and SCHAAF), A., ii, 389.
- by colloidal manganese dioxide (LOTTERMOSER and LEHMANN), A., ii, 688.
- decomposition of, by fat catalase (NORDEFELDT), A., ii, 36.
- decomposition of, by organic compounds (MORGULIS and LAVINE), A., i, 17.
- catalytic action of phosphates on oxidation of dextrose by (WITZMANN), A., i, 160.
- equilibrium of the reaction between iodine and (ABEL), A., ii, 35, 180; (BRAY), A., ii, 629.
- velocity of reaction of sodium iodide with (BOHNSON), A., ii, 185.
- action of, on unsaturated compounds (WEITZ and SCHEFFER), A., i, 863.
- reaction of vanadic acid with (AUCIER), A., ii, 457.
- detection and estimation of (HORST), A., ii, 461.
- estimation of (HASSELSKOC), A., ii, 651.
- sulphide, simple Kipp's apparatus for generation of (CONNELL), A., ii, 109.
- vapour pressure of (CARDOZO), A., ii, 327.
- viscosity and molecular dimensions of (RANKINE and SMITH), A., ii, 696.
- estimation of, in water (CHÉRIEN and VANDENBERGHE), A., ii, 214.
- Hydrogen electrode**. See Electrode.
- Hydrogen ions**, determination of concentration of (WELLS), A., ii, 55; (MICHAELIS and GYEMANT), A., ii, 56; (VAN ALSTINE), A., ii, 214; (FELTON), A., ii, 409; (KOLTHOFF), A., ii, 409, 515; (MONTER-WILLIAMS), A., ii, 650.
- mobility of (v. HEVESY), A., ii, 295.
- negative, formation of (KLEMENC), A., ii, 692.
- estimation of, colorimetrically (EVERS), A., ii, 705.
- Hydrolysis of salts**, theory of (TIAN), A., ii, 439.
- relation of, to molecular weight determinations (COLIN and CHAUDUN), A., ii, 255.
- Hydroquinan**. See Methylhydrocuprean.
- Hydroquinene**, and its dihydrochloride (GIEMSA and HALBERKANN), A., i, 584.
- Hydroquinidine**, dichloro- (GIEMSA and HALBERKANN), A., i, 584.
- Hydroscopoline**, hydroxy-, and its salts (GADAMER and HAMMER), A., i, 590.

- Hydrosols**, dispersion of colloids in (TIAN), A., ii, 439.
- Hydrosulphamine derivatives** (BINZ and HOLZAPFEL), A., i, 30, 197.
- Hydrosulphites**. See Hyposulphites under Sulphur.
- Hydrous acil**, preparation of (JOHNSON and BROWN), A., i, 806.
- Hydroxodithylenediamineruthenium salts**, nitroso- (WERNER and SMIRNOV), A., i, 14.
- Hydroxy-acids**, distinction between, by means of their effect on the conductivity of boric acid (BÖSEKEN), A., i, 843, 844.
esters, condensation of ethyl sodio-cyanoacetate with (INGOLD), T., 336.
- Hydroxyaldehydes**, preparation of, and their derivatives (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 420.
- γ -Hydroxyaldehydes** (HELPERICH and LECHER), A., i, 421.
- Hydroxyaryl aldehydes**, preparation of (HAAKII), A., i, 729.
- Hydroxycarbonyl compounds** (KARRER and FERLA), A., i, 341; (KARRER and ROSENFELD), A., i, 793.
- Hydroxyl**, replacement of halogens by (ROSENMUND and HARMS), A., i, 103.
- Hydroxyl ions**, mobility of (v. HEVESY), A., ii, 295.
- Hydroxylamine**, structure and reactions of, and its derivatives (MICHAEL), A., ii, 329.
decomposition of, in presence of colloidal platinum (FINDLAY and THOMAS), T., 170.
- Hydroxynitrilase**, properties of (KRIEBLE and WIELAND), A., i, 233.
- Hygrine hydrazone** (HESS and ANSELM), A., i, 882.
- Hygrine alkaloids** (HESS and ANSELM), A., i, 881.
- Hyoscines**, physiological action of (CUSHNY), A., i, 289.
- Hyoscyamines**, physiological action of (CUSHNY), A., i, 289.
- Hyperphosphatemia** (FEIGL), A., i, 73.
- Hypnotics** (PUYAL and MONTAGNE), A., i, 108; (FOURNEAU, MONTAGNE, and PUYAL), A., i, 106.
- Hypophosphorous acid**. See under Phosphorus.
- Hyposulphites**. See under Sulphur.
- I.
- Ice**, colour of (TOMKINSON), A., ii, 396.
- Ignition** of mixtures of gases (MORGAN and WHEELER), T., 239.
of mixtures of ethylene and air (CHAPMAN), T., 1677.
- β -Iminazolethyltrimethylammonium hydroxide**, and its aurichloride (ACKERMANN and KUTSCHER), A., i, 499.
- $\beta\beta'$ -Iminodipropionic acid**, ethyl ester, and its benzoyl derivative (RUZICKA and FORNASIER), A., i, 53.
- Indanediones**. See Diketohydrindenes.
- Indazole**, derivatives of (v. AUWERS and SCHAICH), A., i, 806.
- Indazole**, 3-chloro-5-nitro- (KENNER and WITHAM), T., 1057.
- Indazole-2-carboxylic acid**, esters of (v. AUWERS and SCHAICH), A., i, 808.
- Indene**, action of sodammonium on (LEBRAU and PICON), A., i, 660.
- Indican**, detection of, in water (JOLLES), A., ii, 69.
- Indicators**, theory of (WIEGNER), A., ii, 387.
new (BABE and CABRERA), A., ii, 55; (CSÁNYI), A., ii, 270; (KINKEAD), A., ii, 124.
use of two, in acidimetry and alkalimetry (LIZIUS), A., ii, 650.
- Indigo-carmina**, use of, with methyl orange as an indicator (MOERS), A., ii, 705.
- Indigoids**, colour of (MARTINET), A., i, 275.
- Indigotin**, preparation of (PHILLIPS), A., i, 811.
constitution of (ROBINSON), A., i, 452; (MADELUNG), A., i, 810.
catalytic decolorisation of (WIELAND), A., i, 889.
estimation of (THOMSON), A., ii, 471.
- Indigotin**, hexabromo-, tetrabromochloro-, and tetrabromodifluoro- (JANSE), A., i, 453.
- isoIndigotin-6:6'-disulphonic acid**, sodium salt (MARTINET and DORNIER), A., i, 516.
- Indigotinetrasulphonic acid**, constitution of (GRANDMOUGIN), A., i, 889.
- Indium acetylacetonate** (MORGAN and DREW), T., 1062.
- Indole-2-carboxyacetylamine** (KERMACK, PERKIN, and ROBINSON), T., 1626.
- Indole-2-carboxy- α -(carbethoxy)ethylamide** (KERMACK, PERKIN, and ROBINSON), T., 1628.
- Indole-2-carboxylic acid**, and its β -carbethoxy- α -methylvinyl ester (KERMACK, PERKIN, and ROBINSON), T., 1625.
- Indoles**, autoxidation of (ODDO), A., i, 127.
derivatives of (ALESSANDRI and PASSERINI), A., i, 592.

- Indones**, detection of, colorimetrically (DE FAZI), A., ii, 357.
- Indophenol-*N*-oxide**, and its *O*-benzoyl derivative (MEYER and ELBERS), A., i, 240.
- 1(3')-Indoxylidihydro- α -8-naphthafuran-2-one**, 4-bromo- (FRIES and FRELLSTEDT), A., i, 432.
- 3(3')-Indoxyl-6-methylindole** (BONNEFOY and MARTINET), A., i, 195.
- Inflammability of gases** (TERRES), A., ii, 99.
- Infectoria**, toxicity of acids to (COLLETT), A., i, 835.
- Inositol**, oxidation of (CONTARDI), A., i, 94.
hexaphosphate, synthesis of (POSTERNAR), A., i, 225.
- Inositol** in *Capsella bursa pastoris* (ZEHMEISTER and SZÉCSI), A., i, 158.
- Inositol-phosphoric acid** in plants (ANDERSON), A., i, 152.
- Interfacial tension** (REYNOLDS), T., 460, 462.
- Intestines**, small, hydrogen-ion concentration in the (MCCLENDON), A., i, 634.
- Intramolecular condensation** (CUSMANO), A., i, 132.
influence of steric factors on (KENNER and WITHAM), T., 1452.
- Inulin**, and its triacetyl derivative (FRINGSHEIM and AROKOWSKY), A., i, 545.
absence of dextrose in products of hydrolysis of (BOURQUELOT and BRIDEL), A., i, 498.
methylation of (KARRER and LANG), A., i, 312.
ethyl ether (LILIENFELD), A., i, 650.
- Invertase**, theory of the action of (MICHAELIS), A., i, 468.
extraction of (WILLSTÄTTER and RACKE), A., i, 823.
- Iodic acid**. See under Iodine.
- Iodimetry** (DE MIRANDA and VAN LIMBURG), A., ii, 516.
- Iodine**, spectra of (KIMURA; MAKINO), A., ii, 142.
band spectrum of (STEBING), A., ii, 361, 667.
fluorescence and absorption spectrum of the vapour of (FRINGSHEIM), A., ii, 612.
polarisation and fluorescence of the vapour of (FRINGSHEIM), A., ii, 257.
fluorescence and ionisation of (SMYTH and COMPTON), A., ii, 364.
photochemistry of solutions of (STOBBE and SCHMITT), A., ii, 76.
- Iodine**, solubility of, in various solvents (HILDEBRAND and JENES), A., ii, 23.
adsorption of, by carbon (FIRTH), A., ii, 382.
catalytic action of, in preparation of coumarin (YANAGISAWA and KONDO), A., i, 682.
equilibrium of the reaction between hydrogen peroxide and (ABEL), A., ii, 35, 180; (BRAY), A., ii, 629.
action of, on metals (MATTIGNON), A., ii, 272.
action of alkalis and, on nitrogen organic compounds (ROBIN), A., i, 674.
constitution of the compound of starch and (LOTTERMOSER), A., i, 708.
influence of, in sulphonation (AUGER and VARY), A., i, 667.
the system, tellurium and (DAMIENS), A., ii, 110, 257.
preparation of triaryl and trialkyl derivatives of (ARREGUINE and GARCÍA), A., i, 534.
- Iodine monochloride** (FOURNEAU and DONARD), A., ii, 584.
- Hydriodic acid**, estimation of, electrometrically (HENDRIXSON), A., ii, 273.
- Iodides**, estimation of, electrovolumetrically (KOLTHOFF), A., ii, 555.
estimation of, volumetrically, with silver salts (KOLTHOFF), A., ii, 517.
estimation of, in presence of iodates (THÜRINGER), A., ii, 214.
- Iodic acid**, reaction of oxalic acid with (LEMOINE), A., ii, 100, 500, 540.
reaction between potassium iodide and (DHAN), A., ii, 37.
detection of, microchemically (BOLLAND), A., ii, 57; (DENIGES), A., ii, 126.
estimation of, electrometrically (HENDRIXSON), A., ii, 411.
- Iodine organic compounds**, new type of (COLLIE and REILLY), T., 1550.
action of Grignard reagents on (HERWORTH), T., 1244.
- Iodine estimation**:-
estimation of, volumetrically (KOLLER), A., ii, 410.
- Iodine-silver cells**. See Cells.
- Iodoform**, action of Röntgen rays on chloroform solutions of (BAUMEISTER and GLOCKER), A., ii, 367.
- Iodoglobulin** (STRAUSS and GRÜTZNER), A., i, 200.

- Ions, mobility of, in helium** (McLENNAN and EVANS), A., ii, 478.
 heat of hydration of (BORN), A., ii, 166.
 diameter of, in non-aqueous solutions (WALDEN), A., ii, 171.
 exchange of energy in the change of atoms into (AUDUBERT), A., ii, 297.
 antagonism of (KUCHMANN, LUCANUS, and MULHAUPT), A., i, 147; (NEUSCHLOSS), A., i, 148.
 migration of, in blood, in relation to the transport of carbon dioxide (DOISY and EATON), A., i, 753.
 electrolytic. See Electrolytic ions.
 univalent organic, mobility of (V. HERVEY), A., ii, 236.
- Ionisation, modified theory of** (KENDALL), A., ii, 491.
 distinction between radiation and (COMPTON and OLMSTEAD), A., ii, 368.
 of gases (PINKUS and DE SCHULTHESS), A., ii, 368; (PINKUS), A., ii, 369.
 by α -rays (HESS and HORNYAK), A., ii, 292.
 of strong electrolytes (HARKINS), A., ii, 180.
 of ternary electrolytes (DRUCKER), A., ii, 161.
- Ionisation potential** (COMPTON and OLMSTEAD; MOHLER and FOOTE), A., ii, 368.
 of metals (MOHLER, FOOTE, and MEGGERS), A., ii, 8.
- iso- and ψ -isomers, optical properties and constitution of** (KNOEVENAGEL and OELBERMANN), A., i, 866.
- Iridium, L-series spectrum of** (DAUVILLIER), A., ii, 669.
- Iron, spectrum of** (GERCKE), A., ii, 612.
 ultra-violet spark spectrum of (MILLIKAN), A., ii, 3; (L. and E. BLOCH), A., ii, 286.
 vacuum spark spectrum of (MILLIKAN, BOWEN, and SAWYER), A., ii, 609.
 passivity of (DE BRUYN), A., ii, 153.
 diffusion of carbon into (RINGE), A., ii, 455.
 transformation of, at the Curie point (DEJEAN), A., i, 573.
 valency scale of (WOHLER and BALZ), A., ii, 633.
 molten, solubility of graphite in (RUEN and BREN), A., ii, 198.
 rusting of, microscopy of (ACKERMANN), A., ii, 511.
 corrosion and passivity of (FRIEND), T., 932.
 effect of copper on the velocity of solution of, in acids (BELL and PATRICK), A., ii, 318.
- Iron, condition of, in nitric acid** (BROWN), A., ii, 676.
 and its oxides, equilibrium of, with carbon and its oxides (FALCKE), A., ii, 511; (MATSUBARA), A., ii, 644.
 action of fused sodium hydroxide on (WALLACE and FLECK), T., 1842.
 reduction of nitro-compounds with (POMERANZ), A., i, 725.
 hydrogen ion concentration necessary for precipitation of (PATTEN and MAINS), A., ii, 218.
 precipitation of tin by (BOUMAN), A., ii, 134.
- Iron alloys, solubility limits and eutectic points for** (DAEVES), A., ii, 454.
 estimation of total and graphitic carbon in (WENGER and TRAMPLER), A., ii, 519.
 estimation of vanadium in (ROLLA and NUTT), A., ii, 597.
 with carbon (RUEN), A., ii, 553.
 graphitisation in (HONDA and MURAKAMI), A., ii, 699.
 with cerium (CLOTOSKI), A., ii, 203.
 with chromium and nickel (CHEVENARD), A., ii, 336.
 with silicon (MURAKAMI), A., ii, 589.
- Iron compounds, distribution of, in plants** (MAQUENNE and CERGHELLI), A., i, 759.
 in concretions in animal organs (GONNEMANN), A., i, 79.
- Iron carbide, precipitation of, in steel** (PORCEVIN and CHEVENARD), A., ii, 510.
 nitrides, dissociation pressures of (NOYES and SMITH), A., ii, 394.
 oxides, decomposition of (LETEY), A., ii, 218.
 action of carbon monoxide with (CHAUDRON), A., ii, 178.
 sodium pyrophosphate (OLIVERI-MANFARA), A., ii, 338.
 ammonium alum, colour of (BONNELL and PERMAN), T., 1994.
 sulphide, reaction between carbon dioxide and (GOLDSCHMIDT), A., ii, 553.
- Ferrio salts, catalytic composition of** hydrogen peroxide by (BOUSSUS), A., ii, 250.
 chloride, use of, in the preparation of phenolphthalein (WAED), T., 850.
 hydroxide, adsorption of thorium-F and -C by (CRANSTON and BURNETT), T., 2036.
 separation of, from aluminium and chromium hydroxides (JACQUEMONT and M. LEMARCHANDS), A., ii, 351.

Iron:—

- Ferric oxide**, action of sodium sulphide on (WITT), A., ii, 403.
- anhydrous yellow** (YOE), A., ii, 337.
- sulphate**, reduction of acid solutions of, by magnesium and zinc (SUGDEN), T., 233.
- Ferrous salts**, catalytic oxidation of, in acid solution (THOMAS and WILLIAMS), T., 749.
- theory of the oxidation of** (FRIEND), T., 932.
- oxidation of**, by potassium ferri- cyanide (HANNIK), A., ii, 685.
- detection of** (BALAREFF), A., ii, 712.
- hydroxide peroxide**, chemical and physical properties of (BAUDISCH), A., ii, 337.
- ammonium sulphate**, reaction between silver nitrate and (DHAR, DATTA, and BHATTACHARYA), A., ii, 36.
- Ferrates**, electrolytic preparation of (GRUBE and GMEIN), A., ii, 49.
- Ferrites**, electrolytic preparation of (GRUBE and GMEIN), A., ii, 49.
- Iron organic compounds** (BENNETT and TURNER), A., i, 472.
- Iron, cast**, estimation of manganese in (GRAZIANI and LOSANA), A., ii, 464.
- estimation of silicon in** (GARCIA), A., ii, 343.
- estimation of sulphur in**, colorimetrically (Misson), A., ii, 556.
- Steel**, influence of forging on the electrical resistance of (DUPUY), A., ii, 481.
- magnetic determinations of A points in** (ISHIWARA), A., ii, 643.
- corrosion of**, by chlorine-treated water (CLARK and ISELEY), A., ii, 94.
- precipitation of cementite in** (SAUVAGEOT), A., ii, 553.
- premature precipitation of iron carbide in** (PORTEVIN and CHEVENARD), A., ii, 510.
- estimation of chromium in** (EVANS), A., ii, 279, 562.
- estimation of phosphorus in** (ARINANO), A., ii, 347; (KINDER), A., ii, 594.
- estimation of sulphur in**, colorimetrically (Misson), A., ii, 556.
- estimation of titanium in** (DIECKMANN), A., ii, 597.
- estimation of vanadium in** (ROLLA and NUTT), A., ii, 597.
- See also Cobalt steel and Nickel steel.

Iron detection, estimation, and separation:—

- detection of**, by dimethylglyoxime (VAUBEL), A., ii, 596.
- detection of**, microchemically, with sodium salicylate (VAN ZIJF), A., ii, 463.
- estimation of** (NAKAZONO), A., ii, 596.
- estimation of**, approximately (CURTMAN and HECHT), A., ii, 522.
- estimation of**, by cupferron (LUXDELL), A., ii, 414.
- estimation of**, iodometrically (KOLTHOFF), A., ii, 713.
- estimation of**, microchemically, in organic compounds (NICLOUX and WELTER), A., ii, 523.
- estimation of**, volumetrically (MEURICE), A., ii, 218.
- estimation of**, volumetrically, by means of titanous salts (THORNTON and CHAPMAN), A., ii, 279.
- estimation of**, in alloys with aluminium (HULOT), A., ii, 656.
- estimation of**, in plant products (MAQUENNE; MATHIEU), A., ii, 561.
- estimation of**, colorimetrically in silicates (MATEJKA), A., ii, 658.
- estimation of**, in wines (MATHIEU), A., ii, 415; (MALVEZIN and RIVULAND), A., ii, 851.
- estimation of**, and separation from manganese (KOLLO), A., ii, 218.
- estimation of phosphorus in** (KINDER), A., ii, 594.
- estimation of titanium in** (DIECKMANN), A., ii, 597.
- Iron wire**, passivity of (LILLIE), A., ii, 80, 152.
- Isatic acid**, barium and copper salts (MARTINET and COISSET), A., i, 517.
- Isatin**, and its isomerides and derivatives (HANTZSCH), A., i, 597, 598.
- constitution of salts of** (HELLER), A., i, 891.
- Isatins**, synthesis of (MARTINET and COISSET), A., i, 516.
- Isatin-1-carboxylic acid**, 5-chloro-, ethyl ester (HELLER and JACOBSON), A., i, 440.
- Isatinsulphonic acids** and their salts and derivatives (MARTINET and DORNIER), A., i, 273, 516.
- Isatobenzophenoneketazine** (GERHARDT), A., i, 747.
- Isatofluorenoneketazine** (GERHARDT), A., i, 747.
- Isatogenetic acid**, ethyl ester (RUGGLI and BOLLIGER), A., i, 812.
- Isatogens**, action of phenylhydrazine on (RUGGLI and BOLLIGER), A., i, 812.

- isoIsatogens**, constitution of (RUGGLI and BOLLIGER), A., i, 811.
- Isatol**, constitution of (HELLER), A., i, 891.
- Isinglass** as a protective colloid (GUTBIER and BECKMANN), A., ii, 312.
- Isomerism** in co-ordinated compounds (HÜTTIG; REIHLEN), A., ii, 193.
- and physiological action (CUSHNY), A., i, 289.
- Isomorphous substances**, formation and stability of (BRAUNS), A., ii, 337; (MÜGGE), A., ii, 576.
- Isoprene**, preparation of, from light camphor oil (NISHIZAWA), A., i, 217.
- from turpentine (MAHOOD), A., i, 116.
- Isotopes** (VAN DEN BROEK), A., ii, 295.
- classification of (HARKINS), A., ii, 445.
- number and classification of (HARKINS), A., ii, 690.
- with the same atomic weight (MEYER), A., ii, 78.
- infra-red spectra of (LOOMIS), A., ii, 530.
- atomic volume of (SODDY), A., ii, 698.
- calculation of possible (KOHLEWEILER), A., ii, 689.
- investigation of, by means of anode rays (THOMSON), A., ii, 675.
- Isotopy** and rotation spectra (HAAS), A., ii, 298.
- cis-Itaconatediethylenediaminecobaltic hydrogen itaconate** (DUFF), T., 389.
- J.**
- Jamesonite** (SHANNON), A., ii, 52.
- Juniperus oxycedrus*, action of hydracids on essential oil of (HUERRE), A., i, 258.
- Juniperus taxifolia*, constituents of the oil of (SHINOSAKI), A., i, 351.
- Jurupaite** (EAKLE), A., ii, 702.
- K.**
- Kafir**, proteins extracted from (DOWELL and MENAUL), A., i, 644.
- Kaolinite** (*kaolin*), formation and constitution of (BERNAOLA), A., ii, 407.
- Kataphoresis**, microscopical device for (v. SZENT-GYÖRGYI), A., ii, 14.
- Kations**, catalysis by (HOLMBERG), A., ii, 319.
- Kawa resin** (BORSCHKE and ROTH), A., i, 862.
- Kawa-root**, constituents of (BORSCHKE and ROTH), A., i, 862.
- Kawaic acid**, and its sodium salt (BORSCHKE and ROTH), A., i, 862.
- Ketazines**, condensation of quinones with (GERHARDT), A., i, 746.
- Ketens** (STAUDINGER, RATHSAM, and KJELSGER), A., i, 33; (STAUDINGER, KLEVER, BEREZA, and CORVI), A., i, 34.
- reactions of aliphatic diazo-compounds with (STAUDINGER and REBER), A., i, 245.
- Ketimines** (MOUREU and MIGNONAC), A., i, 108.
- α -Keto-acids**, effect of, on the conductivity of boric acid (BÖSEKEN and FELIX), A., i, 844.
- Keto-anils** (KNOEVENAGEL and JÄGER), A., i, 785.
- α -Ketobutyric acid**, methylamide (ADAMS, BRAMLET, and TENDICK), A., i, 6.
- β -Ketobutyronitrile- α -oxamide**, di-phenylhydrazone of (BENARY and SCHMIDT), A., i, 777.
- 7-Keto-8:6-diethylperiacenaphthindane** (FREISCHER and SIEFERT), A., i, 255.
- Ketodihydroepcampholenic acid**, hydroxy-, lactone (PERKIN and TITLEY), T., 1106.
- 3-Keto-1:3-dihydroindazole**, 5-amino-, and 5- and 7-nitro-, and their salts and derivatives (KENNER and WILHAM), T., 1055.
- 5-Keto-4:5-dihydroindole-diazine[1:4]** (KERMAK, PERKIN, and ROBINSON), T., 1627.
- 2-Keto-1:2-dihydrothionaphthen**. See 3-Oxythionaphthen.
- 2-Keto-1:5-dimethyl-1-dichloromethyl-1:2-dihydrobenzene**. See 1:5-di-methyl-1-dichloromethyl- $\Delta^{2:5}$ -cyclohexadien-2-one.
- α -Keto- $\gamma\gamma$ -diphenyl- Δ^8 -butenoic acid**, and β -bromo-, and their ethyl esters (STAUDINGER and REBER), A., i, 247.
- ϵ -Keto- $\alpha\gamma$ -diphenyl- ϵ -m-hydroxy-phenyl- $\Delta^{\epsilon\gamma}$ -pentadiene**, α -hydroxy-, and its derivatives (DILTHEY and BLOSS), A., i, 190.
- ϵ -Keto- $\alpha\gamma$ -diphenyl- ϵ -m-methoxy-phenyl- $\Delta^{\epsilon\gamma}$ -pentadiene**, α -hydroxy-, and its derivatives (DILTHEY and BLOSS), A., i, 190.
- ϵ -Keto- $\alpha\gamma$ -diphenyl- ϵ -p-tolyl- $\Delta^{\epsilon\gamma}$ -pentadiene**, α -hydroxy-, and its salt (DILTHEY, BAURIEDEL, CENSENBRECHT, SZEGEN, and WINKLER), A., i, 189.

- 2 Keto-5-ethoxy-1:2-dihydrothionaphthen, 4-chloro-, and its derivatives (V. AUWERS and THIES), A., i, 121.
- α -1 Keto-3-ethyltetrahydronaphthyl-3-acetic acid, and its semicarbazone (KON and STEVENSON), T., 91.
- 1 Keto-5-hydroxybenzoylbenzoic acid, α -2:2:3:4:5:6-hexachloro- (FRIES and HARTMANN), A., i, 256.
- 3 Ketoindolenine-2-carboxylic acid, methyl ester, and its phenylhydrazone (RUGGLI and BOLLIGER), A., i, 812.
- 5 Keto-7-methyl-4:5-dihydroindole-diazine(1:4) (KERMACK, PERKIN, and ROBINSON), T., 1635.
- 2 Keto-1-methyl-2:3-dihydronorharman (KERMACK, PERKIN, and ROBINSON), T., 1638.
- 2 Keto-5-methyldihydrothionaphthen, preparation of, and its derivatives (V. AUWERS and THIES), A., i, 120.
- 2 Keto-3-methyl-1:2-dihydrothionaphthen, 5-bromo- (V. AUWERS and THIES), A., i, 120.
- 1 Keto-3-methyloctahydronaphthyl-3-acetic acid, and its semicarbazone (KON and STEVENSON), T., 92.
- α -1 Keto-3-methyltetrahydronaphthyl-3-acetic acid, and its semicarbazone (KON and STEVENSON), T., 90.
- Ketone $C_8H_8O_2$, and its oxime, from oxidation of diamylene (SCHINDELMEISER), A., i, 490.
- $C_8H_{10}O$, and its semicarbazone, from distillation of lead pinate (ÖSTLING), A., i, 665.
- $C_8H_{10}O$, and its derivatives, from β -diethylglutaric acid (KON), T., 821.
- $C_8H_{10}O$, from reduction of ketone $C_8H_{10}O$ (KON), T., 822.
- Ketones, chemical constitution and taste of (FURUKAWA), A., i, 637.
- derived from glutaric acids (KON), T., 810.
- condensation of methylene dicyanide with (ÖSTLING), A., i, 321.
- aliphatic-aromatic unsaturated, phenylhydrazones of (V. AUWERS and LAMMERHIRT), A., i, 464.
- unsaturated, reactivity of (HEILBRON and BUCK), T., 1500, 1515.
- action of semicarbazide on (V. AUWERS), A., i, 465.
- α -unsaturated, crystalline-liquid properties of (VORLÄNDER), A., i, 867.
- Ketones, α -nitro-, derivatives of (GABRIEL and GERHARD), A., i, 687.
- thio-, action of aliphatic diazo-compounds on (STAUDINGER and SIEGWART), A., i, 43.
- dithio-, preparation and properties of (NAIK), T., 379, 1231.
- α -Keto- β - α -nitro- p -methoxyphenylbutyric acid, ethyl ester (KERMACK, PERKIN, and ROBINSON), T., 1639.
- α -Keto- β - α -nitrophenylbutyric acid, ethyl ester (KERMACK, PERKIN and ROBINSON), T., 1634.
- 7-Keto-octane- $\alpha\beta$ dicarboxylic acid, and its semicarbazone (FUJITA), A., i, 702.
- 5 Keto-2-phenyl-4-benzoylphenyldihydro-oxazole, and its derivatives (MINOVICI and THÜRINGER), A., i, 272.
- 7-Keto- γ -phenyl- n -butaldehyde (HELFERICH and LECHER), A., i, 421.
- α -Keto- γ -phenyl- α -di- p -chlorophenyl- Δ^7 -pentadiene, α -hydroxy-, and its zincchloride (DILTHEY, BAURIEDL, GIESSELBRECHT, SEEGER, and WINKLER), A., i, 189.
- 3 Keto-2-phenyl-1:3-dihydroindazole, 5- and 7-nitro-, and their sodium salts (KENNER and WITHAM), T., 1056.
- α -Keto- γ -phenyl- α -di- p -tolyl- Δ^7 -pentadiene, α -hydroxy-, and its salts (DILTHEY, BAURIEDL, GIESSELBRECHT, SEEGER, and WINKLER), A., i, 189.
- 3 Keto-2-phenylindoleninephenylhydrazones, 6-nitro- (RUGGLI and BOLLIGER), A., i, 812.
- α -Ketostearic acid, and its derivatives (THOMS and DECKERT), A., i, 219.
- 2 Keto-1:2:3:4-tetrahydroanthraquinone pentachloro- (FRIES and HARTMANN), A., i, 256.
- 1-Ketotetrahydronaphthalene, and 2-bromo-, and their oximes (STRAUS, ROHRBACHER, and LEMMEL), A., i, 172.
- 4-Keto-1- p -tolyl-1:4-dihydropyridine-2:6-dicarboxylic acid, and its phenylhydrazone (SMIRNOV), A., i, 595.
- Ketotricarboxylic acid, $C_{12}H_{12}O_7$, from pyrochloindanic acid and alkali hydroxide (WIELAND), A., i, 113.
- *Ketoxides, action of acetic acid and a mineral acid on (WEITZ and SCHEFFER), A., i, 869.
- Kidneys, excretion by, in relation to acidic basic equilibrium (NAGAYAMA), A., i, 205.
- Kieserite, reduction of, with carbon dioxide (RIESENFIELD and FADER), A., i, 40.
- Kinetics, application of statistical mechanics to (TOLMAN), A., ii, 99.
- chemical, study of (EGGERT), A., ii, 443.
- Klaproth, Martin Henry, biography of (MEYER), A., ii, 195.
- Kokussagi, essential oil of (SHINOAKI), A., i, 574.

- Kola nut**, estimation of caffeine in (UGARTE), A., ii, 470.
Kryptocyanines (ADAMS and HALLER), A., i, 129.
Kynaurenic acid, constitution of, and its barium salt (BESTHORN), A., i, 600.

L

- Labdanum oil**, analytical characters of (ROURE-BERTRAND FILS), A., i, 798.
Lactacidogen in muscle (EMBDEN and LAQUER; EMBDEN, SCHMITZ, and MEINCKE), A., i, 528; (EMBDEN, GRAFE, and SCHMITZ; WECHSELMANN; ADLER; ADLER and GUNZBURG; LYDING; COHN; EMBDEN and ISAAC; ADLER and ISAAC; LAWACZECK), A., i, 529.
Lactarius, constituents of species of (ZELLNER), A., i, 212.
Lactarius vellereus, constituents of the latex of (ZELLNER), A., i, 212.
Lactic acid, formation and accumulation of, in muscle (MEYERHOF), A., i, 76.
 role of, in muscle (WEBER), A., i, 635.
 benzyl ester (SHONLE and ROW), A., i, 341.
 detection of (HARTWIG and SAAR), A., ii, 356.
 detection of, in organic fluids (PITARELLI), A., ii, 418.
 detection and separation of, by means of its ferric sodium salt (HOFMANN), A., ii, 221.
 estimation of (RIESENFELD), A., ii, 68.
 estimation of, in blood (HARROR), A., ii, 715.
d-Lactic acid (*sarcrolactic acid*), formation of, in the animal organism (TOMITA), A., i, 829, 830.
Lactose (*milk-sugar*), solubility of (GILLIS), A., i, 11.
 hydrolysis of, by emulsion (BRIDEL), A., i, 824.
 estimation of, volumetrically (ADRIANO), A., ii, 284.
 estimation of, in presence of other reducing sugars (LE GRAND), A., ii, 355, 661.
Lævoglucosan (KARRER), A., i, 707.
Lævulinic acid, detection and estimation of, in foods (GRUNHUT), A., ii, 602.
Lævulosean, and its derivatives (PICTET and REILLY), A., i, 544.
Lævulose (*d-fructose*; *fruit-sugar*), optical rotation of mixtures of dextrose, sucrose and (VOSBURGH), A., ii, 233.
Lævulose (*d-fructose*; *fruit-sugar*), fermentation of, by yeast juice or zymia (HARDEN and HENLEY), A., i, 480, 642.
 estimation of, in presence of dextrose (MÜRSCHHAUSER), A., ii, 715.
 estimation of, in presence of other sugars (BEHRE), A., ii, 526.
Lævulose-diphosphoric acid (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 498.
Lævulose-phosphoric acid, and its derivatives (FARBENFABRIKEN VORM. F. BAYER & CO.), A., i, 498.
Laminaria flexicaulis, mucilage of (GRUZEWSKA), A., i, 704.
Lamp, Harcourt pentane, atmospheric corrections for (ROSA, CRITTENDEN, and TAYLOR), A., ii, 704.
Landolt's reaction, kinetics of (EGGEN and SCHARNOW), A., ii, 686, 691.
Lanthanum, atomic weight of (BAXTER, TANI, and CHAPIN), A., ii, 454.
Lanthanum salts, effect of, on respiration (BROOKS), A., i, 855.
Laudanine, constitution of (SPITE), A., i, 50.
γ-Laudanosinecarboxylic acid, ethyl ester (GADAMER and KNOCH), A., i, 580.
Laurel, cherry, hydrocyanic acid in leaves of (ROSENTHALER), A., i, 484.
Laureic acid, benzyl ester (SHONLE and ROW), A., i, 341.
Laurotetanine, and its derivative (GORTER), A., i, 587.
Laurylcarbamide, α-bromo- (TIFFENAR and ARUELY), A., i, 775.
Lazulite from Georgia (WATSON), A., ii, 701.
Lead, spectra of (McLENNAN and ZUMSTEIN), A., ii, 474.
 corpuscular spectrum of (JL and J. DE BROGLIE), A., ii, 615.
 ultra-violet spark spectrum of (L and E. BLOCH), A., ii, 286.
 isotopes, spectra of (MERTON), A., ii, 611.
 atomic volume of (SODDY), A., ii, 698.
 adsorption of, by filter paper (KOLTHOFF), A., ii, 276.
 adsorption of isotopes of, by colloidal silver haloids (FATANS and v. BECKERATH), A., ii, 386.
 equilibrium of copper, sulphur, and (GUENTLER and MEISSNER), A., ii, 402.
 action of water on (THRESH), A., ii, 551.
Lead alloys with bismuth and tin (WÜRSCHMIDT), A., ii, 646.

- Lead alloys** with potassium, electromotive properties of (KREMANN and PRESZFREUND), A., ii, 332.
- with thallium, electromotive properties of (KREMANN and LOBINGER), A., ii, 157.
- with tin and with zinc, electrical resistance of (KONNO), A., ii, 425.
- with tungsten (INOUE), A., ii, 205.
- Lead compounds**, photochemistry of (RENZ), A., ii, 477.
- Lead salts**, estimation of, volumetrically (SASSE), A., ii, 218.
- Lead perchlorate**, use of solutions of, in place of Thoulet's solution (THIEL and STOLL), A., ii, 17.
- basic perchlorates (WEINLAND), A., i, 555.
- oxides, physical chemistry of (GLASSSTONE), T., 1689, 1914.
- peroxide, estimation of, iodometrically (GLASSSTONE), T., 1997.
- sulphide, equilibrium of, with antimony sulphide (ITSUKA), A., ii, 206.
- Lead organic compounds**:—
- di-, tri-, and tetracyclohexyls, and their haloids (KRAUSE and REISSAUS), A., i, 825.
- with aniline (MANDAL), A., i, 410.
- Lead estimation**:—
- estimation of, volumetrically, as chromate (SIMMONS, GORDON, and BOEHMER), A., ii, 63; (KOLTHOFF), A., ii, 64.
- estimation of, in brass (GLAZE), A., i, 559.
- Leaves**, respiration of, in scarcity of oxygen (MAQUENNE and DEMOUSSY), A., i, 758.
- proteins from (CHIBNALL and SCHRYVER), A., i, 482.
- young, oxalic acid in (BAU), A., i, 838.
- Leithin** (LEVENE and ROLF), A., i, 382, 476.
- adsorption of dyes and salts by (CRICKSHANK), A., ii, 89.
- liver, constituents of (LEVENE and SIMMS), A., i, 342.
- sols, ultrafiltration of (BECHHOLD and NEUSCHLOSS), A., i, 705.
- estimation of (VAN DER MARCK), A., ii, 526.
- Lectures** delivered before the Chemical Society (ROBERTSON), T., i; (ASTON), T., 677; (MOORE), T., 1555.
- Lecture experiments**, on kinetics of Landolt's reactions (EGGERT and SCHARNOW), A., ii, 691.
- on the nitrogen of blood (HUGOUNEQ and FLORENCE), A., i, 632.
- Lecture experiments**, to show the reduction of oleic acid to stearic acid (FEULGEN), A., ii, 448.
- Leeches**, action of camphor on the plain muscle of (JOACHIMOGLU), A., i, 146.
- Leguminous plants**. See Plants.
- Lepetit-Bucherer reaction** (FRIEDLANDER), A., i, 443.
- Leptospermol** (PENFOLD), A., i, 860.
- Leptospermum flavescens*, essential oil from the leaves of (PENFOLD), A., i, 859.
- Leucacene** (DZIEWOŃSKI, PODGÓRSKA, LENEBEGER, and SZSKA), A., i, 105.
- Leucine-choline**, preparation of, and its salts (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 228.
- l*-Leucinal, and its derivatives (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 229.
- Leucinal-choline**, and its salts (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 229.
- Leucites**, analysis of (TOMMASI), A., ii, 132.
- Leucoturie acid**, constitution and reactions of (BILTZ and KOEHL), A., i, 817.
- α*-Leucylglycyl-*l*-leucine, and its chloroacetyl derivative (ARDERHALDEN and HANDOVSKY), A., i, 547.
- Lichens**, constituents of (SONN), A., i, 414; (BARGELLINI and MONCADA), A., i, 865.
- Life**, origin and continuance of, on the earth (MOORE), T., 1555.
- Light**, scattering of, in gases (BORN and GERLACH), A., ii, 632.
- absorption of, by halogens (DOBBIE and FOX), A., ii, 566.
- absorption of, by solutions (v. HALBAN and GEIGEL), A., ii, 145.
- Bohr's theory of the emission of (STARK), A., ii, 232; (SOMMERFELD; LADENBERG), A., ii, 567.
- depolarisation by (BAUN), A., ii, 236.
- mechanism of the action of, on cells (NOACK), A., i, 910.
- action of, on chlorophyll (OSTERHOUT), A., i, 263.
- effect of, on displacement reactions (BAUDISCH), A., ii, 290.
- effect of, on complement action (BROOKS), A., i, 143.
- ultra-violet, decomposition of hydrogen peroxide by (KORNFELD), A., ii, 670.
- Lignin** (KARRER and WIDNER), A., i, 771; (v. EULER; MELANDER; HOLMBERG), A., i, 849; (HOLMBERG and SJÖBERG; HOLMBERG and WINTZELL), A., i, 850.

- Lignin**, preparation of, from straw (PASCHKE), A., i, 772.
 extraction of, from rye-straw (BECKMANN, LIESCHE, and LEHMANN), A., i, 546.
 constitution of (HINTIKKA), A., i, 772.
 constitution and sulphite treatment of (FUCHS), A., i, 309.
 oxalic acid from (HEUSER and WINSVOLD), A., i, 845.
 colour reactions of (CROCKER), A., i, 839; (CASPARIS), A., ii, 564.
 estimation of, in cellulose (HEUSER and WENZEL), A., ii, 715.
- Lignite**, constituents of (CIUSA and GALIZZI), A., ii, 343.
- Lime**. See Calcium oxide.
- Limonene** nitroschloride, preparation of (RUPE and LÖFFEL), A., i, 258.
- Lindera præcox* (aburachan), constituents of oil from (SHINOSAKI), A., i, 679.
- Linolenic acid** and its salts (COFFEY), T., 1306.
 oxidation of (COFFEY), T., 1409.
- Linolic acid**, constitution of (TAKAHASHI), A., i, 303.
- Linoxyn**, spontaneous decomposition of (FRITZ), A., i, 303.
- Linseed oil**, composition of (COFFEY), T., 1413.
 oxidation of (COFFEY), T., 1152.
- Linolic acid**, oxidation of (COFFEY), T., 1408.
- Lipase** (CHRISTMAN and LEWIS), A., i, 755.
 action of (ABDERHALDEN), A., i, 68.
 serum, action of atoxyl on (RONA and RACH), A., i, 69.
- Lipochrome** in blood serum (VAN DEN BERGH and MÜLLER), A., i, 256.
- Lipoids** in blood (LEMELAND), A., i, 633.
 action of bromides on (OPPENHEIMER), A., i, 238.
- Liquids**, diffraction of Röntgen rays by (DEBIÈRE), A., ii, 531.
 temperature coefficients of electrical double refraction in (BERGHOLM), A., ii, 568.
 of low conductivity, measurement of electrical osmosis in (STASZEWSKI), A., ii, 13.
 thermal expansion of (HERZ), A., ii, 374.
 surface energy, latent heat and compressibility of (HAMMICK), A., ii, 54.
 electric heater for the evaporation of (MOSEK), A., ii, 15.
 interfacial and surface tensions of (REYNOLDS), T., 468.
- Liquids**, ratio of the density of vapours and (SWIENTOSLAWSKI), A., ii, 535.
 measurement of opacity of (HOLZER), A., i, 633.
 viscosity of (KENDALL and MONROE), A., ii, 241; (VAN AUBEL), A., ii, 575.
 equation of state for (JÄRVINEN), A., ii, 375.
 polymerisation of (FIELDING), A., ii, 487.
 influence of curvature on the chemical action of (LUCE), A., ii, 440.
 anisotropic structure of (GRANDJEAN), A., ii, 91; (VAN DER LINGEN), A., ii, 438.
 fluorescent. See Fluorescent liquids.
 mixed, rotation of (DEUTSCHMANN), A., ii, 146.
 vapour pressure of (PORTER), A., ii, 377.
 miscibility of (FAWSTIR and FISCHER), A., ii, 307.
 separation of, by distillation (DUFFTON), T., 1988; A., ii, 302.
 existence of compounds in (JONESSEN), A., ii, 386.
 non-associated, refraction of (HERZ), A., ii, 529.
 organic, number of atoms and physical properties (HERZ), A., ii, 484.
 specific heat of (TIERHIN), A., ii, 237.
 surface properties of (HARKINS and CHENG), A., ii, 242.
 molecular volume of (WOLFFSE), A., ii, 536.
- Lithium**, arc and spark spectra of (SEELIGER and THAER), A., ii, 566.
 electrical and thermal conductivities of (MEISSNER), A., ii, 151.
 ions, hydration of (BABOROVSKÝ and HANÁKOVÁ), A., ii, 573.
- Lithium chloride**, equilibrium of, with potassium and sodium chlorides (SCHAEFFER), A., ii, 96.
 chloride, hydroxide and nitrate, heats of dilution and specific heats of (RICHARDS and ROWE), A., ii, 351.
 hydride, preparation and salt characters of (MOERS), A., ii, 200.
 specific heat of, at low temperature (GÜNTHER), A., ii, 16.
 selenodithionate (MORGAN and SAMPL), T., 1067.
 silicate, equilibrium of, with calcium and zirconium silicates (SCHWAB and HAACKE), A., ii, 452.
- Lithium organic compounds**—cyanides (MEYER), A., i, 501.
- Lithium detection**—detection of, in plant and animal organs (KEILHOLZ), A., ii, 708.

Lithobilanic acid (WIELAND and WEYLAND), A., i, 178.

Lithocholic acid (WIELAND and WEYLAND), A., i, 178.

Liver, normal pigment of (SALKOWSKI), A., i, 384.

storage of glycogen in (GRUZEWSKA and FAURE-FREMIET), A., i, 699.

action of diastases in, and formation of glycogen (LANGFELDT), A., i, 473.

formation of urea in (FOSSE and ROUCHELMAN), A., i, 382.

blood of, uric acid in (CHAUFFARD, BRODIN, and GRIGAUT), A., i, 288.

Lobelia inflata, alkaloids from (BOEHRINGER & SÖHNE), A., i, 287; (WIELAND), A., i, 802.

Lobelinine, and its hydrochloride (WIELAND), A., i, 803.

obeline, and its salts (WIELAND), A., i, 803.

-, β - and γ -Lobeline (BOEHRINGER & SÖHNE), A., i, 287.

obinol, and its derivatives (McNAIR), A., i, 387.

otarine (SPÄTH), A., i, 50.

acerne (*alfalfa*), distribution of nitrogen in the seed of (MILLER), A., i, 486.

proteins extracted from (DOWELL and MENALL), A., i, 614.

Lactula viticollis, production of light by (KANDA), A., i, 77.

luminescence (TIEDE and BÜSCHER), A., ii, 74; (TIEDE), A., ii, 75.

of solid solutions (SCHMIDT), A., ii, 567.

phenomena of (WINTHER), A., ii, 671.

Jungs, detection of sulphur in the epithelial tissue of (FAURE-FREMIET, DRAGONI, and DE STREEL), A., ii, 228.

Lupanine (MOLANDER), A., i, 886.

Lupines, estimation of alkaloids in (MACH and LEDERLE), A., ii, 718.

Lythrum salicaria, constituents of (CARACIDO and MADINAVEITIA), A., i, 704.

lyxuronic acid, and its derivatives (BERGMANN), A., i, 542.

M.

Machilene (TAKAGI), A., i, 732.

Machilol, and *d*-hydroxy-, and its derivatives (TAKAGI), A., i, 732.

Magenta solutions, regeneration of colour in decolorised (GNEZDA), A., ii, 394.

Magnesia. See Magnesium oxide.

Magnesium, preparation of (MATIGNON), A., ii, 262.

Magnesium, arc and spark spectra of (SEELIGER and THAER), A., ii, 566.

band spectrum of (GEHRCKE and GLASER), A., ii, 611.

emission and appearance of rays in the spectrum of (DE GRAMONT and HEMSALECH), A., ii, 611.

positive-ray analysis of (DEMISTER), A., ii, 402.

velocity of reaction of, in aqueous solutions (VYSKOCIL), A., ii, 389.

precipitation of, by addition of ammonium carbonate (BROEKSMIT), A., ii, 655.

reduction of acid solutions of ferric sulphate by (SUGDEN), T., 233.

action of, on ethyl chloracetate in presence of ethylacetate (SOMMELET and HAMEL), A., i, 646.

metabolism. See Metabolism.

Magnesium alloys with mercury, electromotive behaviour of (SMITS and BECK), A., ii, 402.

Magnesium salts, antagonism of calcium and (KOCHMANN, LUCANUS, and MÜLTHAUPF), A., i, 147.

theory of narcosis produced by (WIECHMANN), A., i, 79.

Magnesium carbonate, crystalline (BROEKSMIT), A., ii, 263.

tri- and *per-thio*carbonates (YEMAN), T., 50.

chloride, equilibrium of, with potassium and sodium chlorides (SCHOLICH), A., ii, 98.

equilibrium of sodium sulphate and (TAKEGAMI), A., ii, 30.

oxide (*magnesia*), vapour pressure of (RUFF and SCHMIDT), A., ii, 486.

crystal structure of (WYCKOFF), A., ii, 262.

change of, from the light to the dense form (PARRAVANO and MAZZETTI), A., ii, 335.

and potash, ratio of, in plants (LAGATT), A., i, 214.

sulphate, hydrates of (TAKEGAMI), A., ii, 698.

equilibrium of sodium chloride and (TAKEGAMI), A., ii, 30.

ammonium sulphate, diffusion of solutions of (PORLEZZA), A., ii, 170.

Magnesium organic compounds, action of, on arylsulphonic chlorides (WEDEKIND and SCHENK), A., i, 664.

action of, with halogen derivatives of tertiary aromatic bisnonthines (CHALLENGER and ALLIRESS), T., 913.

alkyl haloids, constitution of (MEISENHEIMER and CASPER), A., i, 654.

- Magnesium organic compounds**, alkyl and aryl haloids, catalysis in the formation of (HERWORTH), T., 1249.
hydrogen haloids, preparation of (HESS and RHEINOLDT), A., i, 777.
methyl iodide, action of, on mercuric chloride and mercury aromatic ketones (ABELMANN), A., i, 629.
phenyl bromide, action of, with esters or anhydride of phthalic acid (HOWELL), A., i, 42.
isopropyl bromide, action of $\beta\gamma$ -dibromopropylene on (LESPIEAU), A., i, 490.
- Magnesium estimation**:—
estimation of, in saline solutions (CANALS), A., ii, 349.
estimation of, in serum (KRAMER and TISDALL), A., ii, 595.
estimation of, in urine, blood and feces (TISDALL and KRAMER), A., ii, 655.
estimation of, in water (WINKLER), A., ii, 413.
- Magnetic susceptibility**, instrument for measuring (WILSON), A., ii, 81.
- Magnetisation coefficients** of metallic chlorides and oxides (THÉOPHORES), A., ii, 15.
- Magnetism** in relation to atomic structure (OXLEY), A., ii, 82; (v. AUWERS), A., ii, 484.
- Magnetochemistry** of inorganic sulphur compounds (PASCAL), A., ii, 692.
- Mahua**. See *Bassia*.
- Maize cobs**, preparation of acetone and ethyl alcohol from fermentation of (PETERSON, FRED, and VERHULST), A., i, 836.
- Malachite** from Chessy, zinc in (PERRIER), A., ii, 515.
- cis-Maleatodiethylenediaminecobaltic salts** (DUFF), T., 388.
- Malic acid**, rotatory power of (DE MAL-LEMANN), A., i, 7.
effect of ammonium molybdate on the rotation of (DARMOIS), A., i, 539.
salts, active and inactive, solubilities of (DUBOUX and CUTTAT), A., i, 763.
- Malonic acid**, ethyl ester, preparation of (GUPTA), T., 303.
- Malonamide**, monobromo- (BACKES, WEST, and WHITELEY), T., 361.
- Malonanilide**, dibromo- (BACKES, WEST, and WHITELEY), T., 375.
- Malon-p-bromoanilide**, mono- and dibromo- (BACKES, WEST, and WHITELEY), T., 373.
- Malon-2,4-dibromoanilide**, dibromo- (BACKES, WEST, and WHITELEY), T., 374.
- Malon-2,4,6-tribromoanilide**, dibromo- (BACKES, WEST, and WHITELEY), T., 375.
- Malonbromotoluidides**, and their bromo-derivatives (BACKES, WEST, and WHITELEY), T., 376.
- Maloudibenzylamide**, and mono- and dibromo- (BACKES, WEST, and WHITELEY), T., 370.
- Malondi-n- and -iso-butylamides**, and their bromo-derivatives (BACKES, WEST, and WHITELEY), T., 368.
- Malondietiethylamide**, mono- and dibromo- (BACKES, WEST, and WHITELEY), T., 366.
- Malondimethylamide**, monobromo- (BACKES, WEST, and WHITELEY), T., 365.
- Malondimethylaniline**, disulphide (NAIK), T., 354.
- Malondi-n-propylamide**, and mono- and dibromo- (BACKES, WEST, and WHITELEY), T., 367.
- Malonic acid**, formation of, during fermentation of sucrose (v. LIPPMAN), A., i, 86.
action of, on substituted benzhydrol (BAILLON), A., i, 249.
conversion of, into glycine (CURTIS and SIEBER), A., i, 653.
ethyl ester, sodium derivative, condensations of $\alpha\beta$ -unsaturated ester with (INGOLD and POWELL), T., 1579.
- Malonic acid**, halogen derivatives, melting points of, and their quantitative reduction by hydriodic acid (BACKES, WEST, and WHITELEY), T., 359.
- Malononitrile**, action of nitrous acid on (DIELS and BORGWARDT), A., i, 548.
- Malonphenylamide**, and its bromo-derivatives (BACKES, WEST, and WHITELEY), T., 372.
- Malon-p-toluidide**, mono- and dibromo- (BACKES, WEST, and WHITELEY), T., 376.
- Malonyldiurethane**, monobromo- (BACKES, WEST, and WHITELEY), T., 371.
- Malt extract**, emulsin and lipase in (VAN LARK), A., i, 488.
- Malts**, estimation of the diastatic power of (BAKER and HUTTON), A., ii, 420.
- Maltase**, estimation of, in yeast (WILL STÄTTER and STEIBELT), A., ii, 72.
- Maltose**, preparation of (FALCH), A., i, 161.
hydrolysis and constitution of (YAMAZAKI and YAMADA), A., i, 647.
estimation of, in presence of other sugars (LEGRAND), A., ii, 355.
- Malus coriarius**, fat drops on the fruit (MOLISCH), A., i, 213.

- Mandelic acid**, *o*-chloro- (KARRER, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 262.
- Mandelyl-*p*-aminoazobenzene** (PASSERINI), A., i, 896.
- Manganese**, arc spectra of (KIESS and MEGGERS), A., ii, 4; (BRENDLER-WIRMINGHAUS), A., ii, 421.
- arc and furnace spectra of (KING), A., ii, 412.
- valency scale of (WÖHLER and BALZ), A., ii, 633.
- equilibrium of copper, sulphur and (GUERTLER and MEISSNER), A., ii, 640.
- colloidal, presence and effect of, in caoutchouc (BRUNI and PELIZZOLA), A., i, 798.
- absorption and elimination of, in the body (REIMAN and MINOT), A., i, 146.
- manganese compounds**, tervalent (MEYER and NERLICH), A., ii, 509.
- presence of, in plants (BERTRAND and ROSENBLATT), A., i, 759.
- manganese salts** in leguminous plants (JONES and BULLIS), A., i, 810.
- manganese fluoride**, chemistry and crystallography of (EDMINSTER and COOPER), A., ii, 115.
- dioxide**, colloidal, preparation of (CUV), A., ii, 642.
- decomposition of hydrogen peroxide by (LOTTERMOSER and LEHMANN), A., ii, 688.
- equilibrium between manganates, permanganates, and (RUBY), A., ii, 246.
- sulphate, hydrates of (LARSEN and GLENN), A., ii, 54.
- sulphide. See Alabandite.
- Manganous arsenate**, gels of (FLADE, SCHERFFIG, and DEISS), A., ii, 510.
- chloride, equilibrium of ammonium chloride, water and (CLENDINXEN and RIVETT), T., 1329.
- Manganates**, equilibrium between manganese dioxide, permanganates and (RUBY), A., ii, 246.
- Permanganates**, electrolytic preparation of, from ferromanganese (WILSON, HORSCH, and YOUTZ), A., ii, 643.
- absorption spectra of (MOIR), A., ii, 670.
- equilibrium between manganese dioxide, manganates, and (RUBY), A., ii, 246.
- estimation of, volumetrically, in mixtures with dichromates and chromic salts (CHATTERJI), A., ii, 718.
- Manganese detection, estimation, and separation** :—
- detection of (MACRI), A., ii, 278; (BALAREFF), A., ii, 712.
- detection of, microchemically, with sodium salicylate (VAN ZILP), A., ii, 463.
- detection of, in presence of iron (MEUNIER), A., ii, 351.
- detection of, in presence of phosphates (SABALITSCHKA and ERDMANN), A., ii, 134; (SABALITSCHKA and NIESEMAN), A., ii, 278.
- detection of, in plant and animal organs (KEILHOLZ), A., ii, 708.
- estimation of (HOLLUTA and OBRIST), A., ii, 522.
- estimation of, approximately (CURTMAN and HECHT), A., ii, 522.
- estimation of, iodometrically (KIMBALL, KRAMER, and REID), A., ii, 461.
- estimation of, in cast iron (GRAZIANI and LOSANA), A., ii, 464.
- estimation of, and separation from iron (KOLLO), A., ii, 218.
- Mannitol**, influence of ammonium molybdate on the rotation of (TANRET), A., i, 544.
- d*-Mannonic acid**, amides of (VAN WIJK), A., i, 319.
- α -*d*-Mannosidase** (HERNISSEY), A., i, 523.
- Manures**, artificial, mixed, estimation of dicyanodiamide in (HARGREE), A., ii, 224.
- estimation of dicyanodiamide and urea in (JOHNSON), A., ii, 605.
- estimation of ammoniacal nitrogen in (FROIDEVAUX and VANDENBERGHE), A., ii, 462.
- estimation of potassium in (AJON), A., ii, 61; (CHRISTENSEN and FEILBERG), A., ii, 711.
- Maple**, globulin from the seeds of (ANDERSON and KULP), A., i, 821.
- Margarite** (SHANNON), A., ii, 459.
- Marine animals**. See Animals.
- Mass action**, application of the law of, to strong electrolytes (HUGHES), A., ii, 573.
- Matridine**, and its salts (KONDÓ and SATÓ), A., i, 882.
- Matrine**, and its salts (KONDÓ and SATÓ), A., i, 882.
- Matrinic acid** (KONDÓ and SATÓ), A., i, 882.
- Matter**, unity of (DE MARIGNAC), A., ii, 101.
- Mechanics**, statistical, and chemistry (ADAMS), A., ii, 628.
- Meconic acid**, synthesis and constitution of (THOMS and PIETRULLA), A., i, 264.

- Melamine derivatives** (PELLIZZARI), A., i, 620.
- Melampyrum**, glucosides in species of (BRIDEL and BRAECKE), A., i, 840.
- Melanin** (STOLTZENBERG and STOLTZENBERG-BERGJUS), A., i, 32.
preparation and properties of (SALKOWSKI), A., i, 384.
extraction of, from skin (YOUNG), A., i, 467.
- Melanins** (ANGELI and PIERONI), A., i, 628.
- Melanoidin**, formation of, by hydrolysis of proteins (v. FÜRTH and LIEBEN), A., i, 820.
- Melanterite group**, minerals of the (LARSEN and GLENN), A., ii, 54.
- Melanuria**, effect of pyrrole in (SACCARDI), A., i, 755.
- Melene** (FÜNCKE), A., i, 533.
- Melibiose**, occurrence of, in plants (v. LITTMANN), A., i, 86.
- Mellitite** from inclusions in peperino (MILLOSEVICH), A., ii, 343.
- Mellitic acid**, preparation of (PHILIPPI and RIE), A., i, 729.
- Melting points**, law of alternance of (DE FOUCRAND), A., ii, 85.
influence of surface tension on (RIE), A., ii, 164.
- Melting point determinations** (RASSOW), A., ii, 164; (CARPENTER), A., ii, 332.
apparatus for (FRIEDRICHS), A., ii, 238.
- Menthane-6:8-diol**, 1:2 dichloro-. See *Sobrerol dichloride*.
- Menthone**, electrolytic reduction of (MATSUI and SHIMIZU), A., i, 186.
- Menthylrhamnosides**, and their diacetates (FISCHER, BERGMANN, and RAHE), A., i, 96.
- Mercaptans**, catalytic preparation of (KRAMER and REIN), A., i, 359.
- Mercury**, physical properties of (SCHULZE), A., ii, 403.
spectrum of (SEELIGER), A., ii, 143.
absorption and emission spectra of (McLENNAN and SHAYER), A., ii, 668.
arc spectrum of (DINGLE), A., ii, 668.
arc and spark spectra of (SEELIGER and THAER), A., i, 566.
band spectrum of (CHILD), A., ii, 3; (GEHRCKE and GLASER), A., ii, 611.
L-spectrum of (MÜLLER), A., ii, 569.
series spectrum of (LANDÉ), A., ii, 669.
ultra-violet spark spectrum of (L and E. BLOCH), A., ii, 3.
- Mercury vapour**, refractive index of (McLENNAN), A., ii, 665.
absorption spectrum of (TERENY; METCAL and VENKATESACHAR), A., ii, 669.
luminosity of (RICKER), A., ii, 609.
separation of isotopes of, by centrifuging (POOLE), A., ii, 403.
surface tension of (HARKINS and GRAFTON; HARKINS and EWING), A., ii, 87; (PALACIOS), A., ii, 304.
critical constants of (VAN LAAR), A., ii, 83; (WEBER), A., ii, 699.
critical temperature of (MEYER), A., ii, 238.
adsorption of, in analysis (KOLTHOFF), A., ii, 277.
purification of (HARRIES), A., ii, 552; (HARRIES and EVERS), A., ii, 698.
vapour, action of, on carbon tetrahaloids (TAMMANN), A., ii, 450.
action of, on tribromophenol bromide (HUNTER and WOOLLETT), A., i, 233.
- Mercury alloys** (*amalgams*), liquid, transport numbers of (SEACUTT), A., ii, 298.
use of, in volumetric analysis (NAKAZONO), A., ii, 596, 711.
with ammonium, decomposition of (ARONHEIM), A., ii, 296.
with gold, structure of (BRALEY and SCHNEIDER), A., ii, 406.
with magnesium, electromotive behaviour of (SMITS and BECK), A., ii, 402.
with thallium, thermodynamics of (LEWIS and RANDALL), A., ii, 291.
with tin, volume changes of (KOLMER), A., ii, 341.
- Mercury thallium haloids** (BARLOT and FERNOT), A., ii, 552.
- Mercuric salts**, estimation of, volumetrically (SASSE), A., ii, 215.
azide (STETTACHER), A., ii, 48.
chloride, action of acetylene with (JENKINS), T., 747.
action of hypophosphorous acid with (MITCHELL), T., 1566.
action of magnesium methyl iodide on (ABELMANN), A., i, 629.
action of, on salvarsan and neosalvarsan (BINZ and BACH), A., i, 629.
toxicity of, and its solubility in alcohol (LAIRD), A., i, 291.
analysis of (KOLTHOFF and KEIJZER), A., ii, 66.
titration of potassium iodide with (KOLTHOFF), A., ii, 57.

Mercury:—

Mercuric nitrate, use of, in catalytic nitration (DAVIS, WORRAHL, DRAKE, HELMKAMP, and YOUNG), A., i, 338.

oxide, equilibrium of, with sulphur dioxide and ammonia (RUFF, KRÖHNERT, and BRAUN), A., ii, 202.

Mercurous chloride (calomel) electrode. See Electrode.

Mercury organic compounds (KHARASCH and CHALKLEY), A., i, 377.

aromatic (DIMROTH), A., i, 697.

with antipyrine and pyramidone (OLIVERI-MANDALÀ), A., i, 378.

with carbon monoxide and with ethylene, constitution of (MANCHOT), A., i, 323.

with aromatic ketones, action of magnesium methyl iodide on (ABELMANN), A., i, 629.

complex, with phenols (PAOLINI), A., i, 902.

with phenols, action of alkali haloids with (WHITMORE and MIDDLETON), A., i, 377.

with phenylcarbinols (HART and HIRSCHFELDER), A., i, 140.

with thiophen (STEINKOPF), A., i, 830.

action of, with halogen derivatives of tertiary aromatic bismuthines (CHALLENGER and ALUPRESS), T., 913.

Mercury bismuthobromocyanide (VOIRSAZOS), A., i, 232.

bisphenylacetates (WHITMORE and MIDDLETON), A., i, 378.

n-butyl derivatives (TIFFENEAU), A., i, 656.

5:5'-disoamyl-2:2'-dithienyl (STEINKOPF), A., i, 632.

5:5'-dibenzyl-2:2'-dithienyl (STEINKOPF), A., i, 632.

di-n-butyl (TIFFENEAU), A., i, 655.

dicyclohexyl (TIFFENEAU and GANNAGE), A., i, 472.

5:5'-dimethyl-2:2'-dithienyl (STEINKOPF), A., i, 631.

di-4-methylcyclohexyl (TIFFENEAU and GANNAGE), A., i, 472.

5:5'-di-n-propyl-2:2'-dithienyl (STEINKOPF), A., i, 632.

cyclohexyl hydroxide, and its salts (TIFFENEAU and GANNAGE), A., i, 472.

5:5'-diiodo-2:2'-dithienyl (STEINKOPF), A., i, 631.

mercaptides, chemistry of (SACHS), A., i, 762.

Mercury 4-methylcyclohexyl hydroxide, and its salts (TIFFENEAU and GANNAGE), A., i, 472.

3:5:3':5'-tetramethyl-2:2'-dithienyl (STEINKOPF), A., i, 631.

2:5:2':5'-tetraphenyl-3:3'-dithienyl (STEINKOPF), A., i, 632.

Mercuriacetic acid, p-toluidine compound (VECCHIOTTI), A., i, 902.

5:5'-Mercuri-bis-3-nitro-4-hydroxy-phenylarsinic acid (STIEGLITZ, KHARASCH, and HANKE), A., i, 524.

Mercuridiacetic acid, 2:4-anisylene ester (DIMROTH), A., i, 697.

Mercurifluorescein, bromohydroxy-, chloro-, and hydroxy-derivatives (WHITE), A., i, 71.

Mercuri-β-naphthol, chloro- (PAOLINI), A., i, 903.

Mercuriphenolphthalein, hydroxy- (WHITE), A., i, 71.

Mercuriphenolsulphonphthalein, hydroxy-derivatives (WHITE), A., i, 71.

Mercurisallylic acid, o- and p-cyano-, preparation of (RIEDEL ART.-GES.), A., i, 825.

"**Mercurisalignin**," and its triacetate (HART and HIRSCHFELDER), A., i, 140.

Mercurithymol, dichloro-, and diiodo- (PAOLINI), A., i, 903.

Mercurivanillin, chloro- (PAOLINI), A., i, 903.

Mercury detection, estimation, and separation:—

detection of (ARTMANN), A., ii, 350.

estimation of, by electro-deposition (BÜTTGER), A., ii, 65.

estimation of, volumetrically (LOW), A., ii, 134; (BILMANN and THAULOW), A., ii, 560.

estimation of, in the brain (HÜSGEN), A., i, 145.

estimation of, in its ores (HEINZELMANN), A., ii, 521.

estimation of, in organic compounds (BAUER), A., ii, 657.

separation of, from other elements (STRECKER and CONRADT), A., ii, 64.

separation of, from copper, electrolytically (BÜTTGER), A., ii, 351.

Mercury cathode. See Cathode.

Mercury pump. See Pump.

Mesitol, preparation and oxidation of (PORTER and THURBER), A., i, 505.

ethyl ether. See Phenyl-2:4:6-trimethyl ethyl ether.

cis-**Mesotartarodietylenediaminecobaltic salts** (DUFF), T., 388.

Mesothorium, isotopism of, with radium, and their separation from barium (STRONG), A., ii, 294.

- Mesoxalic acid**, ethyl ester, hydrazone, constitution of (STAUDINGER and HAMMETT), A., i, 324.
- Mesoxanilide**, dithio-, and its nitro-derivative (NAIK), T., 382.
- Mesoxodibenzylamide**, dithio- (NAIK), T., 384.
- Mesoxodimethylamide**, dithio- (NAIK), T., 384.
- Mesoxomonophenylamide**, dithio- (NAIK), T., 1237.
- Mesoxomono-*p*-toluidide**, dithio- (NAIK), T., 1237.
- Mesoxo- α - and - β -naphthylamides**, dithio-, and their *trans*-nitro-derivatives (NAIK), T., 1236.
- Mesoxo-*o*- and -*p*-toluidides**, dithio-, and their *trans*-nitro-derivatives (NAIK), T., 1235.
- Mesoxo-*o*- and -*p*-tolylamic acids**, dithio-, ethyl esters (NAIK), T., 1237.
- Metabolism**, effect of water-soluble vitamins on (KARR), A., i, 75.
- of frogs' larvae (FARNAS and KRASINSKA), A., i, 833.
- basal, influence of colloidal iron on (LANGFELDT), A., i, 754.
- of women (BLUNT and DYE), A., i, 699.
- calcium (WHEELER), A., i, 474.
- carbohydrate (STEFF and ZUMBUSCH), A., i, 381; (STAUD), A., i, 475.
- of muscle (FARNAS), A., i, 831, 832.
- magnesium (SCHIFF and STRANSKY), A., i, 381.
- of nitrobenzaldehydes and nitrophenyl-acetaldehyde (SHERWIN and HYNES), A., i, 754.
- nitrogen, of higher plants (CHIBNALL and SCHRYVER), A., i, 482.
- nucleic acid, significance of protamines and histones (CLEMENTI), A., i, 74.
- nuclein (THANNHAUSER and SACHS), A., i, 201; (THANNHAUSER and OTTENSTEIN), A., i, 521, 526.
- protein (KARR and TOLSTOI), A., i, 475.
- Metallic alloys**. See Alloys.
- carbonates (LEITMEIER), A., ii, 112.
- chlorides and oxides, coefficient of magnetisation of (THEODORIDES), A., ii, 15.
- haloids, heat of dissociation of (v. WEINBERG), A., ii, 165.
- hydrides (EPHRAIM and MICHEL), A., ii, 638.
- oxides, action of light on, in solutions of silver salts (TAMMANN), A., ii, 147.
- allotropy of (VEIL), A., ii, 423.
- reactions of hydrogen and carbon monoxide on (CHAUDRON), A., ii, 584.
- Metallic oxides**, catalytic action of, with allyl alcohol (SABATIER and KUBOTA), A., i, 645.
- particles, colour and Brownian movement of (FÜRTH), A., ii, 243.
- salts, specific refraction of, in dilute solutions (CHENEVEAU), A., ii, 421.
- photoelectric investigations with solutions of (SWENSSON), A., ii, 483.
- electrical conductivity of mixtures of (BENRATH and TESCHE), A., ii, 152.
- ionic mobilities in solutions of, and the effect of viscosity on their conductivity (MACINNES), A., ii, 619.
- specific heat of aqueous solutions of (JAUCH), A., ii, 375.
- use of, as catalysts in organic reactions (KORCZYŃSKI), A., ii, 445.
- double decomposition of (LE CHATELIER), A., ii, 248.
- action of organic colloids with (SCALA), A., i, 287.
- compounds of hexamethylene-tetramine with (RAY and SARKAR), T., 390.
- complex (THOMAS), T., 1140.
- molten, electrical conductivity of (JAEGER and KARMA), A., ii, 159.
- sulphates, solubility of, in sulphuric acid (KENDALL and LANDON), A., ii, 45; (KENDALL and DAVIDSON), A., ii, 453.
- sulphides, colloidal, production of (v. HAHN), A., ii, 577.
- estimation of (MOSER and SCHATTNER), A., ii, 558.
- Metallurgy** of early China (WANG), A., ii, 39.
- Metals**, arrangement of atoms in (HILL), A., ii, 38.
- spark spectra of, and their obliteration by gases (GIBSON and NOYES), A., ii, 610.
- emissivity of (HENNING), A., ii, 285.
- thermal and electrical conductivity of (MEISSNER), A., ii, 480.
- current produced by pressure on a soldered junction of (POLANYI), A., ii, 372.
- electric potential of different parts of the same piece of (KYROPOULOS), A., ii, 154.
- ionisation and resonance potentials of (MOHLER, FOOTER, and MEGGERS), A., ii, 8.
- passivity and photo-electric sensitivity of (FRESE), A., ii, 569.

- Metals**, anodic behaviour of, in acetone solutions (SGORGI and MARCHETTI), A., ii, 572.
 vapour pressure and sublimation of (VAN LIEMPT), A., ii, 165.
 determination of transition points of (SMITS and SPYMAN), A., ii, 246, 386.
 solubility of, in acids containing formaldehyde (GRIFFIN), A., ii, 115.
 solution of, in non-metallic solvents (KRAUS), A., ii, 370.
 structure of, after electro-deposition (HUGHES), A., ii, 677.
 crystallisation of, by electrical precipitation (ATEN and BOERLAGE), A., ii, 81.
 formation of crystals in (CARPENTER and ELAM), A., ii, 641.
 formation of twins during cold working of (VOGEL), A., ii, 547.
 recrystallisation of (TAMMANS), A., ii, 172, 202; (MASING), A., ii, 551.
 interpenetration of (WEISS and LAPITTE), A., ii, 551.
 catalytic hydrogenation of organic compounds by (KELBER), A., ii, 630.
 reduction by, in acid solutions (SUGDEN), T., 233.
 displacement of, in salt solutions (BARLOT), A., ii, 247, 297.
 action of iodine on (MATIGNON), A., ii, 272.
 and their alloys, action of mercury fulminate on (LANGHANS), A., i, 652.
 action of mixtures of sulphuric and nitric acids on (PASCAL, GARNIER, and LABOURASSE), A., ii, 585.
 hemolysis by (HAUSMANN and KERL), A., i, 143.
 active hydrogenating, preparation of (BROCHET), A., ii, 100, 101.
 colloidal. See Colloidal metals.
 finely-divided, effect of temperature on (WRIGHT and SMITH), T., 1633.
 adsorption of gases by (TAYLOR and BURNS), A., ii, 630.
 heated, action of sodium hydroxide with (WALLACE and FLECK), T., 1841.
 heavy, oligodynamic action of (ACÉL), A., i, 147; (FALFA and RICHTER-QUITZNER), A., ii, 335.
 powdered, adsorption by (v. EULER and HEDELIUS), A., ii, 490.
 estimation of, in alloys (SCHMIDT), A., ii, 595.
 of the ammonium sulphide group, separation of (SABATISCHKA), A., ii, 278.
- Metals**, of the second group, separation of (LONGINESCU and THEODORESCU), A., ii, 413.
Meteorites from South Africa, Ireland, and Alsace (PRION), A., ii, 407; (FLETCHER and PRION), A., ii, 403.
Methamoglobin, mechanism of the formation of (ELLINGER), A., i, 135.
 nitrite compound of (HARTRIDGE), A., i, 135.
Methane, electrolytic formation of (MÜLLER and RIUS y MIRÓ), A., i, 218.
 manufacture of (FARBWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 297.
 viscosity and molecular dimensions of (RANKINE and SMITH), A., ii, 696.
 ignition of mixtures of air and (MORGAN and WHEELER), T., 241.
 synthesis of the polyacetic acids from (INGOLD), T., 341; (INGOLD and POWELL), T., 1222, 1869; (INGOLD and PERREN), T., 1582, 1865.
 synthesis of alkylaryl derivatives of (MÜLLER), A., i, 656.
Methane, bromo- and chloro-*tri*-nitro- (SCHMIDT, SCHUMACHER, and KÜHLMANN), A., i, 645.
 bromo-, chloro-, and iodo-*tri*-nitro- (MACBETH and PRATT), T., 354.
 chloro-derivatives, action of, on the frog's heart (KIESSLING), A., i, 382.
 trichlorobromo-, photochemical reaction between chlorine and (NODACK), A., ii, 568; (v. RANKE), A., ii, 580.
tetra-nitro- (SCHMIDT and SCHUMACHER), A., i, 660.
 nitrohalogen-derivatives, toxic action of (MAYER, PLANTÉFOU, and VILÈS), A., i, 147.
 lability of the halogen atoms in (MACBETH and PRATT), T., 1856.
Methanetriacetic acid, preparation of, and α -cyano-ethyl ester (INGOLD), T., 340, 352.
 esters, conditions of formation of (INGOLD and PERREN), T., 1865.
Methoxides, metallic, decomposition of, by heat (DURAND), A., i, 492.
***β*-Methoxyacenaphthenequinone**, and its quinoxaline derivative (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 434.
Methoxyallylbenzenes, hydroxy- (MAUTHNER), A., i, 726.
1-Methoxyanthraquinone-2-carboxylic acid (ECKERT and ENDLER), A., i, 871.
***β*'-Methoxyatropic acid**, ethyl ester (WISLIZENUS and v. SCHRÖTTER), A., i, 672.

- 8-*p*-Methoxybenzeneazodihydroquinine, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
- 8-Methoxy-8-benzeneazquinoline, 5-amino- and 5-hydroxy- (JACOBS and HEIDELBERGER), A., i, 45.
- 2-Methoxybenzoic acid, 3-nitro- (FISHMAN), A., i, 23.
- m*-Methoxybenzoic acids, amino- (FROELICHER and COHEN), T., 1430.
- 4-Methoxybenzophenone, preparation of (MONTAGNE), A., i, 348.
- 2-Methoxybenzyl alcohol, 3-nitro- (FISHMAN), A., i, 23.
- 4-Methoxybenzyl alcohol, 3-amino-, and 3-cyano- (FISHMAN), A., i, 23.
- 9-*p*-Methoxybenzylfluorene, 2:7-di-bromo- (SIEGLITZ), A., i, 111.
- 4'-Methoxybenzylidenecoumaranone, (v. AUWERS and ANSCHÜTZ), A., i, 683.
- 6-Methoxy-2-carboxyindole-3-acetic acid (KERMACK, PERKIN, and ROBINSON), T., 1641.
- p*-Methoxycinnamoylhydrindene (BORSCH and POMMER), A., i, 169.
- 5-Methoxydimethyl-4:5-dihydroureic acids, 4-hydroxy- (BILTZ and MAX), A., i, 132; (BILTZ and BÜLOW), A., i, 609; (BILTZ and STRUFE), A., i, 613.
- 5-Methoxy-1:3-dimethylhydantoin (BILTZ and HEIDRICH), A., i, 817.
- 5-Methoxy-1:3-dimethylhydantoin-5-carboxylamide (BILTZ and MAX), A., i, 618.
- 5-Methoxy-1:3-dimethylhydantoin-5-carboxylic acid, methyl ester (BILTZ and BÜLOW), A., i, 609.
- Methoxy-2:2-dimethylindane-1:3-diones, hydroxy- (FLEISCHER and STEMMER), A., i, 253.
- 5-Methoxy-1:9-dimethyl- ψ -uric acid (BILTZ and STRUFE), A., i, 612.
- cis*-5-Methoxydiphenanthrapyridazine-4:5-dihydrate, 4-hydroxy-, and its salts (SCHÖNBERG and ROSENTHAL), A., i, 810.
- 4-Methoxy-3-ethoxybenzoic acid, and its ethyl ester (SPÄTH), A., i, 51.
- 3-Methoxy-4-ethoxy- α -zonitrile, and 6-nitro- (KEFFLER), T., 1481.
- Methoxyethylcarbonatobenzoic acids (SPÄTH), A., i, 51.
- 3-Methoxy-5-ethylhexahydrophenanthrylene oxide (MANNICH and LOWENHEIM), A., i, 125.
- 5-Methoxy-1-ethylhydantoin-5-carboxylic acid, methyl ester (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- N*-(α -Methoxyethyl)-*m*- and *p*-nitroanilines, *N*- β -trichloro- (WHEELER and SMITH), A., i, 411.
- 5-Methoxy-7-ethyl- ψ -uric acid (BILTZ, MARWITZKY, and HEYN), A., i, 608.
- 4'-Methoxyflavone (v. AUWERS and ANSCHÜTZ), A., i, 683.
- α -Methoxyglutaric acid, and its silver salt (INGOLD), T., 320.
- Methoxy groups, estimation of, volumetrically (TROEGER and TIERBE), A., ii, 135.
- trichloro-, properties and constitution of (KLING and FLORENTIN), A., i, 90.
- 5-Methoxyhydantoin-5-carboxyethylamide (BILTZ and MAX), A., i, 617.
- 5-Methoxyhydantoin-5-carboxymethylamide (BILTZ and MAX), A., i, 617.
- 5-Methoxy-2-hydroxybenzoic acid tetra-acetylglucose ester (KARRER, BAUMGARTEN, GÜNTHER, HARRER, and LANG), A., i, 262.
- 2-Methoxy-5-hydroxymethylbenzenediazonium chloride (FISHMAN), A., i, 23.
- Methoxy- γ -hydroxy-2-methylquinoline- β -carboxylic acid (FROELICHER and COHEN), T., 1431.
- 4-Methoxy-6-hydroxyphenyl 4'-methoxystyryl ketone, 3-nitro- (SONN), A., i, 280.
- 7-Methoxyindirubin, 4-chloro- (MARTINET and COISSET), A., i, 517.
- 6-Methoxyindole and its 2-carboxylic acid (KERMACK, PERKIN, and ROBINSON), T., 1632.
- 6-Methoxyindole-2-carboxyacetalamide (KERMACK, PERKIN, and ROBINSON), T., 1633.
- 7-Methoxyisatin, 4-chloro-, and its derivatives (MARTINET and COISSET), A., i, 516.
- 11-Methoxy-5-keto-4:5-dihydroindole-diazine (1:4) (KERMACK, PERKIN, and ROBINSON), T., 1633.
- α -Methoxy- β -methylaminophenylprop-ane, and its aurichloride (SPÄTH and GÖHRING), A., i, 47.
- 2-Methoxy-5-methylbenzil, and its β -oxime (v. AUWERS), A., i, 119.
- 2-Methoxy-3-methylbenzophenone-6-carboxylic acid, 4'-hydroxy-, and its silver salt (SIMONSEN and RAV), T., 1346.
- 2-Methoxy-5-methyloxybenzoic acid. See 4-Methoxy-*m*-tolyl benzyl ketone.
- 4'-Methoxy-2-methyldepsenol, 5-hydroxy- (KARRER, RÜDLINGER, GLATFELDER, and WAITZ), A., i, 800.
- 4'-Methoxy-2-methyldepsenone, 5-hydroxy- (KARRER, RÜDLINGER, GLATFELDER, and WAITZ), A., i, 800.
- 5-Methoxy-1-methyl-9-ethyl- ψ -uric acid (BILTZ and STRUFE), A., i, 613.

- 4'-Methoxy-6-methylflavanone (v. AUWERS and ANSCHÜTZ), A., i, 682.
- 4'-Methoxy-6-methylflavone, and 3-bromo- (v. AUWERS and ANSCHÜTZ), A., i, 682.
- 7(5)-Methoxy-5(7)-methylflavone (RUHEMANN), A., i, 430.
- 5-Methoxy-3-methylhydantoin, and its barium salt (BILTZ and KOBEL), A., i, 816.
- 5-Methoxy-1-methylhydantoin-5-carboxymethylamide (BILTZ and MAX), A., i, 618.
- 5-Methoxymethylhydantoin-5-carboxylamides (BILTZ and KRZIKALLA), A., i, 615; (BILTZ and MAX), A., i, 618.
- 5-Methoxy-1-methylhydantoin-5-carboxylic acid, methyl ester (BILTZ, MARWITZKY, and HEYN), A., i, 606.
- 5-Methoxy-1-methylhydantoin-5-carboxymethylamide (BILTZ and MAX), A., i, 618.
- 6-Methoxy-3-methylindole. See 6-Methoxyscatole.
- 1-Methoxy-2-methylphenanthraquinazine (SIMONSEN and RAU), T., 1313.
- 3-Methoxy-4-methyl-*o*-phthalic acid, and its salts and derivatives (SIMONSEN and RAU), T., 1344.
- 3-Methoxy-4-methyl- α -quinolone (KERMACK, PERKIN, and ROBINSON), T., 1631.
- 5-Methoxy-7-methyl- ψ -uric acid (BILTZ, MARWITZKY, and HEYN), A., i, 607.
- 7-Methoxy- β -naphthafurandione (STAUDINGER, SCHLENKER, and GOLDSTEIN), A., i, 433.
- 8-Methoxynaphthalene, 1-hydroxy- (STAUDINGER, SCHLENKER, and GOLDSTEIN), A., i, 433.
- 1-Methoxy-2-naphthoic acid, ethyl ester (v. AUWERS and FRÜHLING), A., ii, 232.
- 3-Methoxy-2-naphthoic acid, and its silver salt and ethyl ester (v. AUWERS and FRÜHLING), A., ii, 232.
- o*-4-Methoxynaphthoylbenzoic acid, and its salts (SCHOLL, SEER, and ZINKE), A., i, 678.
- 4-Methoxy- α -naphthyl methyl ketone, and its oxime and picrate (SCHNEIDER and KUNAU), A., i, 879.
- 7-Methoxyphenoxazone, and its derivatives (MEYER and EBERS), A., i, 241.
- Methoxyphenylallyl ethers (MAUTHNER), A., i, 726.
- 2-Methoxyphenylacetaldehyde, 5-bromo-, and its semicarbazone (READ and ANDREWS), T., 1785.
- p*-Methoxyphenylacetic acid, *o*-nitro- (KERMACK, PERKIN, and ROBINSON), T., 1631.
- α -*p*-Methoxyphenylethylamine, derivatives of, with aldehydes (BETTI and CAPACCIOLI), A., i, 107.
- m*-Methoxyphenylhydrazine (KERMACK, PERKIN, and ROBINSON), T., 1640.
- β -*p*-Methoxyphenyl- β - α -naphthylisuccinic acid, and its metallic salts (BAILLON), A., i, 250.
- p*-Methoxyphenyl 4-nitrostyryl ketone (KAUFFMANN), A., i, 423.
- α -Methoxyphenylpropane, β -bromo- (SPATH and GÖHRING), A., i, 47.
- 2-Methoxy- β -phenylpropionic acid, α -5-dibromo- β -hydroxy-, and its brucine salt (READ and ANDREWS), T., 1788.
- p*-Methoxyphenylpyruvic acid, *o*-nitro- (KERMACK, PERKIN, and ROBINSON), T., 1630.
- 5-Methoxy-2-phenyltetrahydrofuran (HELFREICH and LECHER), A., i, 421.
- β -*p*-Methoxyphenyl- β -*o*- and -*p*-tolylpropionic acids, and their metallic salts (BAILLON), A., i, 249.
- β -*p*-Methoxyphenyl- β -*o*- and -*p*-tolylisuccinic acids, and their metallic salts (BAILLON), A., i, 249.
- 5-Methoxyphenyl-*p*-tolylsulphone, 2-amino-, and its derivatives (HALBERKANN), A., i, 661.
- α -Methoxypropane, $\alpha\beta$ -dibromo- (SPATH and GÖHRING), A., i, 47.
- Methoxycyclopropane-1:2-dicarboxylic acid, and its silver salt (INGOLD), T., 327.
- 4-Methoxyquinoline-2-carboxylic acid, and its salts (BESTHORN), A., i, 690.
- 4-Methoxy-6-quinolyl 8-methylbromaminobutyl ketone dihydrobromide (RUZICKA and SEIDEL), A., i, 586.
- 6-Methoxy-4-quinolylmethylcarbinol (VEREINIGTE CHINIFABRIKEN ZIMMER & Co.), A., i, 355.
- 6-Methoxy-4-quinolyl 3-*N*-methyl-2-piperidonyl ketone, and its salts (RUZICKA and SEIDEL), A., i, 586.
- 6-Methoxyscatole (KERMACK, PERKIN, and ROBINSON), T., 1640.
- 6-Methoxyscatole-2-carboxylic acid, and its ethyl ester (KERMACK, PERKIN, and ROBINSON), T., 1639.
- β -Methoxystilbene, α -nitro- (WIELAND, BLUMICH, and WAGNER), A., i, 554.
- o*-Methoxystyryl methyl ketone, and its oxime (HEILBRON and BUCK), T., 1509.
- m*-Methoxystyrylquinoline, 2-*p*-hydroxy-, derivatives of (WERNER), A., i, 55, 443.
- α -Methoxy-*ac*-tetrahydronaphthalene, β -bromo- (v. BRAUN and KIRSCHBAUM), A., i, 408.

- 1-Methoxytetrahydronaphthalene, 2-bromo- (STRAUS, ROHRACKER, and LEMMEL), A., i, 171.
- 4'-Methoxy-2'-*p*-toluenesulphonylbenzenazo-2:4-dihydroxybenzene (HALBERKANN), A., i, 661.
- 4'-Methoxy-2'-*p*-toluenesulphonylbenzenazo-8-naphthol (HALBERKANN), A., i, 661.
- 4'-Methoxy-2'-*p*-toluenesulphonylbenzenazo-*m*-phenylenediamine hydrochloride (HALBERKANN), A., i, 661.
- 2-Methoxy-*p*-toluic acid, 3-amino-, 3-nitro-, and 3-cyano-, and their salts and derivatives (SIMONSEN and RAU), T., 1342.
- 2-Methoxy-*p*-toluidine, 3-nitro-, and its acetyl derivative (SIMONSEN and RAU), T., 1342.
- 4-Methoxy-*m*-tolyl benzyl ketone, and its derivatives (V. AUWERS), A., i, 119.
- 4-Methoxy-*o*-tolyl methyl ketone, 5-hydroxy-, and its derivatives (FARGHER and PERKIN), T., 1732.
- β -5-Methoxy-*m*-tolylloxycinnamic acid, and its ethyl ester (RUHMANN), A., i, 430.
- p*-Methoxy-*o*-tolyl propenyl ketone semicarbazidesemicarbazone (V. AUWERS), A., i, 466.
- 5-Methoxy-1:3:9-trimethyl-4:5-dihydronic acid, 4-hydroxy- (BILTZ and MAX), A., i, 132; (BILTZ and STRUFE), A., i, 614.
- 5-Methoxytrimethyl-4-uric acids (BILTZ and ZELLNER), A., i, 611; (BILTZ and STRUFE), A., i, 614.
- 8-Methoxy-1:3:9-trimethylisoxanthine (BILTZ and STRUFE), A., i, 614.
- 3-Methoxy-5-vinylhexahydrophenanthrylene oxide (MANNICH and LÖWENHEIM), A., i, 124.
- Methyl alcohol, purification of (LANZENBERG and DUCLOUX), A., i, 298.
electrolytic oxidation of (MÜLLER and RIUS y MIRÓ), A., i, 218.
detection of, in spirits (RADE; MAUE), A., ii, 220, 281; (HAHN), A., ii, 281.
detection and estimation of, in presence of ethyl alcohol (CHARIN), A., ii, 598.
- Methyl bromide, preparation of (SCHROETER), A., i, 217; (STEINKOPF and SCHWEN), A., i, 841.
carbonates, chloro-, toxicity of (MAYER, MAGNE, and PLANTÉFOL), A., i, 147.
chloride, preparation of (YONEYAMA and BAN), A., i, 3.
fluoride, density of (MOLES and BATUECAS), A., i, 389.
- Methyl mercaptan, preparation of (ARNDT, MILDE, and ECHERT), A., i, 842.
perchloro- (HELFRICH and REID), A., i, 300.
- Methylacetoneanil, and its derivatives (KNOEVENAGEL and JÄGER), A., i, 786.
- Methylacetone-*p*-tolil (KNOEVENAGEL and JÄGER), A., i, 786.
- 3-Methylallantoxaidin (BILTZ and ROEL), A., i, 893.
- 3-Methylallantoxanic acid. See 3-Methyloxonic acid.
- α -Methyl- α -allylcyclohexanone, oxidation of, by alkaline permanganate (CORNUBERT), A., i, 422.
- Methylallylcyclohexanones (CORNUBERT), A., i, 730.
- Methylallylcyclohexan-2-ones, spectrochemistry of (CORNUBERT), A., ii, 5.
- Methylamines, formation of, from methyl alcohol (TURNER and HOWALD), A., i, 97.
- 2-Methylaminobenzenesulphonic acid, 5-nitroso-, salts of (HOUBEN and SCHREIBER), A., i, 106.
- 2-Methylaminobenzoic acid, 5-nitroso-, hydrogen sulphate (HOUBEN and SCHREIBER), A., i, 109.
- Methylaminobenzenophenone, *trans*-nitro- (MEISENHEIMER, V. BUDKEWICZ, and KANANOW), A., i, 357.
- 7-Methylamino-2:8-dimethylphenazine, 3-amino-, methochloride, preparation of (COHEN and CRABTREE), T., 2065.
- 4- β -Methylaminoethylglyoxaline, and its salts (FARGHER and PYMAN), T., 734.
- dl*- α -Methylamino- β -glyoxaline-4 propionic acid (*dl*-methylhistidine), and its salts and derivatives (FARGHER and PYMAN), T., 736.
- ϵ -Methylaminohexoic acid, lactam, and its benzoyl derivative, ethyl ester (RUZICKA, SEIDEL, and HUGOSOX), A., i, 592.
- 8-Methylamino- α -hydroxytetrahydronaphthalene, and its hydrochloride (TETRAUN G. m. b. H.), A., i, 559.
- 2-Methylamino-5-methoxyphenyl-*p*-tolylsulphone, and its derivatives (HALBERKANN), A., i, 661.
- 7-Methylamino-2-methylphenazine, 3-amino-, methochloride, preparation of (COHEN and CRABTREE), T., 2065.
- 2-Methylaminophenyl-*p*-tolylsulphone, 5-chloro-, and its acetyl derivative (HALBERKANN), A., i, 731.
- 4-Methylaminoisophthalic acid (SHOOLAKA), A., i, 674.

- 2-Methylaminopyridine (TSCHITSCHIBABIN, R. A. and A. A. KONOWA-LOWA), A., i, 450.
- 6-Methylamino-*m*-tolyl-*p*-tolylsulphone, and its acetyl derivative (HALBERKANN), A., i, 780.
- Methylammonium iodide (BILTZ and MAX), A., i, 546.
- α -Methylisobutylamine, and its phenylcarbamide (MAILHE), A., i, 814.
- 8-Methyl- α -isobutylhexoic acid, α -cyano-, and its silver salt and isobutyl ester (HESLER and LAMB), A., i, 231.
- Methylaniline, *p*-aminonitroso-, acetyl derivative (PERKIN and PLANT), T., 1835.
- Methylaniline-*p*-sulphonic acid (*methyl-p-sulphanilic acid*) (HALBERKANN), A., i, 780.
- Methyl-*p*-anisidinoacet-*p*-anisidide (HALBERKANN), A., i, 563.
- 2-Methylanthraquinone, 5:8-di- and 5:6:7:8-tetra-chloro- (ECKERT and ENDLER), A., i, 871.
- 1:6-di-hydroxy-, synthesis of (SIMONSEN and RAU), T., 1339.
- Methylation in the animal organism (TOMPA), A., i, 834.
- 3-Methylazobenzene, 2:4-di-trinitro-4'-hydroxy- (BORSCHKE), A., i, 625.
- 4-Methyl-1:2-benzanthraquinone, and 2-chloro- (SCHOLL, SEER, and ZINKE), A., i, 677.
- 5-Methylbenzil, 2-hydroxy-, and its derivatives (v. AUWERS), A., i, 119.
- 6-Methylbenzimidazole, 5-chloro-, and its formate (MORGAN and CHALLENGER), T., 1542.
- 6-Methylbenzo-3-naphthindole, and its picrate (FRIEDLÄNDER), A., i, 444.
- 4-Methylbenzophenone chloride, condensation of phenol with (HAHN), A., i, 243.
- 1-Methylbenzothiazolemethoperechlorate (KÖNIG and TREICHEL), A., i, 738.
- 5-Methyl-1:2:3-benzotriazole, 4-chloro-1-hydroxy-, and its hydrazine salt (MORGAN and GLOVER), T., 1705.
- Methyl-1:2:3-benzotriazoles, 4-nitro-1-hydroxy- (BRADY and BOWMAN), T., 898, 900.
- 9-*o*-Methylbenzylfluorene (SIEGLITZ and JASSOY), A., i, 791.
- 9-*m*-Methylbenzylfluorene, and di-bromo- (DE FAZI), A., i, 569.
- 9-*p*-Methylbenzylfluorene (SIEGLITZ), A., i, 111; (SIEGLITZ and JASSOY), A., i, 791.
- 9-*p*-Methylbenzylfluorene, 2:7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 782.
- 9-*m*-Methylbenzylidenefluorene, and its picrate (DE FAZI), A., i, 569.
- 9-Methylbenzylidenefluorenes, 2:7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 781.
- 2-*o*-Methylbenzylthiophen (STREINKOPF and SCHUBART), A., i, 579.
- 6-Methyl-2:4-bis(4-chloromethyl)-1:3-benzodioxine-8-carboxylic acid, and its sodium salt (ALIMCHANDANI and MELDRUM), T., 208.
- 8-Methylbutane, γ -amino-, and its phenyl carbamide (MAILHE), A., i, 314.
- bromo-derivatives (KRONSTEIN), A., i, 154.
- γ -Methylbutane- α :8-dicarboxylic acid, α :8-dicyano- γ -hydroxy-, and its silver salt (BIRCH, GOUGH, and KON), T., 1323.
- 8-Methylbutane- γ :8-tricarboxylic acid, β -hydroxy-, lactone (BIRCH, GOUGH, and KON), T., 1323.
- 2-Methyl-6-*tert*-butyleinehomeric acid, and its picrate and ethyl ester (MUMM and BÖHME), A., i, 439.
- α -Methylbutyric acid, γ -cyano-, ethyl ester (INGOLD), T., 339.
- β -Methylbutyric acid, γ -cyano-, ethyl ester (INGOLD), T., 339.
- Methylcaffolide (BILTZ and KRZIKALLA), A., i, 615.
- 7(6)-Methylcamphanoquinoxaline, 6(7)-chloro- (MORGAN and CHALLENGER), T., 1540.
- Methylcellulose, distillation of, under reduced pressure (REILLY), A., i, 545.
- 4-Methyl-2-*tri*- β -chloro- α -hydroxyethylbenzoic acid, 6-hydroxy- (SCHLEUSSNER and VOSWINCKEL), A., i, 112.
- 4-Methyl-2-trichloromethylphthalide, 6-hydroxy- (SCHLEUSSNER and VOSWINCKEL), A., i, 111.
- Methylcuprean (GIEMSA and HALBERKANN), A., i, 583.
- Methylisocyanine perchlorate (KÖNIG and TREICHEL), A., i, 739.
- 3-Methyl-3-cyanomethylpyrrole (BENARY), A., i, 127.
- 5-Methyl-3-cyanomethylpyrrole-2-carboxylic acid, and its ethyl ester, and anhydrides (BENARY), A., i, 127.
- N*-Methyldehydrodantoic acid, methyl ester, and its derivatives (BILTZ and KÖSEK), A., i, 816.
- 5-Methyldeoxybenzoïn, 2-hydroxy-. See *m*-Tolyl benzyl ketone, 4-hydroxy-.
- 2-Methyldepsenol, 5:4'-di-hydroxy- (KARRER, RÜDLINGER, GLATTFELDER, and WAITZ), A., i, 800.

- 2-Methyldepenone, 5:4'-*di*- and 5:3':4'-*tri*-hydroxy- (KARBER, RÜDLINGER, GLATTFELDER, and WAITZ), A., i, 800.
- 5-Methyl-2:2-diethylhydrindene (FLEISCHER and MELBER), A., i, 251.
- 4- and 5-Methyl-2:2-diethylindane-1:3-diones, and their derivatives (FLEISCHER and MELBER), A., i, 251.
- α - and β -Methyldiethylnaphthindanedi-one (FLEISCHER and MELBER), A., i, 252.
- 4-Methyl-2:2-diethyl-7-isopropylhydrindene (FLEISCHER and MELBER), A., i, 252.
- α -Methyl-(?)1:4-dihydronaphthalene, and its dibromide (DE POMMERRAU), A., i, 567.
- 3-Methyldihydronorhydrastinine, and its salts (ROSENMUND), A., i, 587.
- 5-Methyldihydrophenazine, 1-nitro- (KEHRMANN and EFFRONT), A., i, 602.
- Methyldi- γ -hydroxypropylamine, and its salts (V. BRAUN and BRAUNSDORF), A., i, 436.
- Methyl- β -dimethylaminoisobutylcarbinol, preparation of, and its benzoate (RÖLFS), A., i, 98.
- Methyldiphenylbenzodioxazole (HENRICH, ROSETEUSCHER, and MATULKA), A., i, 888.
- Methylene group, reactivity of the (GUITA), T., 298.
- dicyanide, condensation of, with aldehydes and ketones (OSTLING), A., i, 321.
- iodide, preparation of (PERKIN and SCARBOROUGH), T., 1408.
- 4-Methyleneamino-3:5-dihydro-1:2:4-dioxazole, and its derivatives (V. GILSEWALD and SIEGENS), A., i, 356.
- Methylenebenzyl methyl ketone, hydroxy-, and its copper salt and phenylhydrazone (WEITZ and SCHEFFER), A., i, 869.
- Methylene-blue, action of, on yeast (FRANKE), A., i, 33.
- Methylenebis(cyclohexane)pirocyclohexane-3:5-dione (NORRIS and THORPE), T., 1206.
- Methylenebis(cyclopentane)pirocyclohexane-3:5-dione (NORRIS and THORPE), T., 1208.
- Methylene bis-(1) thionaphtha-4-oxy-coumarin (SMILES and McCLELLAND), T., 1816.
- ethylenecamphorphenylhydroxylamine, and its salts and derivatives (RUPE and DIENL), A., i, 425.
- 3:4-Methylenedioxybenzonitrile, 6-bromo-, and 6-nitro- (KEFFLER), T., 1478.
- Methylenedioxybenzosuberane (BOESCHE and ROTH), A., i, 168.
- Methylenedioxybenzyl- β -naphthylamine, and its platinumchloride (CIUSA and ZEBBINO), A., i, 196.
- 6:7-Methylenedioxy-2:3-dimethylquinoline, and its salts (RILLIET and KREITMANN), A., i, 568.
- 3:4'-Methylenedioxyflavone (V. AUWERS and ANSCHÜTZ), A., i, 683.
- 6:7-Methylenedioxy-2-methylquinoline, and its salts (RILLIET and KREITMANN), A., i, 568.
- 3:4-Methylenedioxyphenylethylamine, β -hydroxy-, and its derivatives (MASON), T., 1077.
- α -3:4-Methylenedioxyphenyl- β -naphthacinchonic acid, sodium salt and methyl ester (CIUSA and ZEBBINO), A., i, 196.
- 3:3:4-Methylenedioxyphenyl- β - α -naphthylisossuccinic acid (BAILLON), A., i, 250.
- 6:7-Methylenedioxy-2-phenylquinoline, and its salts (RILLIET and KREITMANN), A., i, 568.
- α -3:4-Methylenedioxyphenyltetrahydro- β -naphthacinchonic acid (CIUSA and ZEBBINO), A., i, 196.
- 3:3:4-Methylenedioxyphenyl- β - α - and - μ -tolylisopropionic acids (BAILLON), A., i, 250.
- 3:3:4-Methylenedioxyphenyl- β - α - and - μ -tolylisossuccinic acids (BAILLON), A., i, 250.
- 6:7-Methylenedioxyquinoline, and its hydrochloride (SONN and BESHSCHKE), A., i, 805.
- 2-*mp*-Methylenedioxyethylpyridine methiodide (WERNER), A., i, 55.
- Methylenedi- p -phenetidine, action of nitric acid on (REVERDIN), A., i, 564.
- Methylenediphosphoric acid, preparation of (CONTARDI), A., i, 93.
- Methylene-*l*-epicamphor, amino- and hydroxy-, and their derivatives (PERKIN and TITLEY), T., 1090.
- 1:4-*endo*-Methylene-6-methyltetrahydroquinoxaline, and its salts and derivatives (MOORE and DOUGLEAT), T., 1172.
- 1-Methyl-3-ethylbenzene, 6-amino-, and its derivatives and 6-nitro-, and *s-tri*-nitro- (MAILHE), A., i, 682.
- bromo- and chloro-derivatives (MAILHE), A., i, 502.
- 2-Methyl-6-ethylcinchomeric acid, and its picrate and ethyl ester (MUNZ and BOHME), A., i, 439.

- 1-Methyl-2-ethyl-6-cyclohexenone, and its semicarbazone (BLAISE), A., i, 647.
- Methylethylthioarsine (BURROWS and TURNER), T., 433.
- Methyl ethyl ketoanil (KNOEVENAGEL and JÄGER), A., i, 786.
- Methyl ethyl ketone 2:4-dinitro-m-tolylhydrazine (BRADY and BOWMAN), T., 899.
- 4-Methyl-3-ethylpyridine, salts of (RABE and JANTZEN), A., i, 433.
- 8-Methyl-6-ethylquinoline (MAILHE), A., i, 662.
- 2-Methyl-5-ethylthiophen (STEINKOPF and SCHUBART), A., i, 579.
- 1-Methyl-9-ethyl-8-thiouric acids (BILTZ, STRUFE, TOPP, HEYN, and ROHL), A., i, 612.
- 1-Methyl-9-ethyluric acid (BILTZ and STRUFE), A., i, 613.
- 1-Methyl-9-ethyl- Δ^2 -isouric acid, 4-chloro- (BILTZ and STRUFE), A., i, 613.
- 1-Methyl-9-ethyl- Δ^2 -isoxanthine (BILTZ, STRUFE, TOPP, HEYN, and ROHL), A., i, 612.
- Methylugenol, compound of nitrosobenzene with (ALESSANDRI), A., i, 730.
- 5- and 7-Methylflavones, 6-chloro- (RUHEMANN), A., i, 431.
- 9-Methylfluorene, 2:7-dibromo- (SIEGLITZ), A., i, 111.
- α - and β -Methylglucoside dichlorohydrin sulphates (HELPERICH), A., i, 497.
- γ -Methylglutaconic acid, α -cyano-, ethyl ester (INGOLD and PERREN), T., 1597.
- Methylglutaric acids, cyano-, ethyl esters (INGOLD), T., 338; (INGOLD and THORPE), T., 500.
- ζ -Methyl- Δ^2 -heptadiene- ϵ -acetic acid, β -cyano-, ethyl ester (RUZICKA and TREBLER), A., i, 38.
- β -Methyl- Δ^2 -heptene, ζ -amino- and ζ -chloro- and their derivatives (HELPERICH and DOMMER), A., i, 51.
- Methylhexamethylenetetrammonium salts (HAHN and WALTER), A., i, 651.
- β -Methylhexane, ϵ -amino-, and its phenylcarbamide (MAILHE), A., i, 314.
- Methylcyclohexane, di- and tri-fluoro- (SWARTS), A., i, 657.
- 3-Methylcyclohexane-1:4-dione, and its semicarbazone (HELPERICH), A., i, 185.
- 3-Methylcyclohexane-1:4-dione-2:3-dicarboxylic acid, methyl ester, and its diphenylhydrazine (HELPERICH), A., i, 185.
- 3-Methyl- Δ^2 -cyclohexenone, polymerisation of (RUZICKA), A., i, 31.
- 8-Methylhexoic acid, α -cyano-, isomyl ester (HESSLER and LAMB), A., i, 231.
- cis- and trans-Methylcyclohexylamines, and their derivatives (SKITA and HAUBER), A., i, 504.
- di-Methylhistidine. See di- α -Methyl-amino-8-glyoxaline-4-propionic acid.
- 3-Methylhydantoin-9-carboxylamide (BILTZ and KRZIKALLA), A., i, 615.
- 1-Methylhydantoylamine, 5-hydroxy- (BILTZ and MAX), A., i, 894.
- Methylhydrocuprean (GIENSA and HALBERKANN), A., i, 582.
- 5-Methylindazole, 6-amino- (PEARMAN), T., 718.
- 2-Methylindole, autoxidation of (ODDO), A., i, 127.
- 3-Methylindole. See Scatole.
- 1-Methylindole-2-carboxyacetaldehyde (KERMACK, PERKIN, and ROBINSON), T., 1637.
- 6-Methylisatin, preparation of (BONNEFOY and MARTINET), A., i, 194.
- 6-Methylisatin-*m*-toluidide (BONNEFOY and MARTINET), A., i, 194.
- N-Methyl-laurotetamine methyl ether (isoglucine), and its salts (GORTER), A., i, 588.
- Methylmalonanilide disulphide (NAIK), T., 384.
- Methylmalonic acid, conversion of, into α -alanine (CURTIUS and SIEDER), A., i, 653.
- Methylmalonodimethylamide disulphide (NAIK), T., 1239.
- Methylmalonmono-*o*-toluidide, and its disulphide (NAIK), T., 1238.
- Methylmalonotoluidides, and their disulphides (NAIK), T., 1238.
- di-*p*-Methylmandelic acid, tetra-acetylglucose ester (KARRER, BACHMARTEN, GÜNTHER, HARDER, and LANG), A., i, 262.
- α -Methyl-*d*-mannosidase, synthetic action of (HÉRISSEY), A., i, 623.
- α -Methyl-*d*-mannoside, hydrolysis of (HÉRISSEY), A., i, 305, 623.
- ω -Methylmethanetracetic acid, and cyano-, ethyl esters (INGOLD and PERREN), T., 1599, 1600, 1663.
- 5-Methyl-4'-methoxybenzylidenecoumaranone (v. AUWERS and ANSCHÜTZ), A., i, 632.
- 2-Methyl-N-methyltetrahydroquinolinolophenazine, 8-amino-, methochloride (COHEN and CRATFEE), T., 2065.
- N-Methyl-naphthacarbazole. See 7-methylbenzo-8-naphthindole.
- 2-Methyl-8-naphthachromone- α , and its derivatives (SCHNEIDER and KUNAU), A., i, 880.

- 9-Methyl- $\alpha\beta$ -naphthaphenazine, 10-chloro- (MORGAN and CHALLENGER), T., 1540.
- 10-Methylnaphthaphenazine, 5:9-di-amino-, methochloride, preparation of (COREN and CRABTREE), T., 2068.
- 2-Methyl-8-naphthiminazole, hydrochloride and hydriodide (DIELS), A., i, 281.
- o-6-Methylnaphthoylbenzoic acid, o-6-chloro- (SCHOLL, SEER, and ZINKE), A., i, 678.
- 2-Methylnaphthylamine, 1-nitroso-, salts and derivatives of (FISCHER, DIETRICH, and WEISS), A., i, 58.
- Methyl-orange, use of, as an indicator, with indigo carmine (MOERK), A., ii, 705.
- Methylxaluric acid, constitution of (BEHREND and HARTEL), A., i, 98.
- 1-Methyloxindole, and oximinoo- (STOLLE), A., i, 586.
- 3-Methyloxonic acid, and its potassium salt (BILTZ and ROUB), A., i, 893.
- 8-Methylpentane, 3,5e-tribromo- (LESPIEAU), A., i, 400.
- 7-Methylpentane, synthesis of (VAN RISSGHEM), A., i, 489.
- 8-Methylpentan- β -ol. See Dimethyl-propylcarbinol.
- 8-Methyl- Δ^2 -pentene, β -mono- and $\alpha\beta$ -dibromo- (LESPIEAU), A., i, 490.
- 8-Methyl- Δ^2 -pentinene, and its silver salt (LESPIEAU), A., i, 490.
- N-Methylphenarsazine chloride (WIELAND and RHEINHEIMER), A., i, 373.
- Methylphenazine, amino-, and its derivatives, absorption spectra of (KEHRMANN and SANDOZ), A., i, 277.
- 8-Methylphenazine, 3:7-diamino-, methochloride (COHEN and CRABTREE), T., 2068.
- 5-Methylphenazonium salts, mono- and di-nitro- (KEHRMANN and EFFRONT), A., i, 602.
- Methylphloroanthophenone (KARRER and ROSENFELD), A., i, 793.
- Methylphloroshephenone (KARRER and ROSENFELD), A., i, 793.
- Methylphloroetophenone (KARRER and ROSENFELD), A., i, 793.
- 5-Methylphthalic acid, 3-hydroxy-. See 7-Coccinic acid.
- 2-Methylphthalide, 3:4:5-trihydroxy-2-trichloro-, and its triacetyl derivative (ALMCHANDANI and MELDRUM), T., 206.
- 4-Methylphthalide, 2:6-dihydroxy- (SCHLEUSSNER and VOSWINCKEL), A., i, 112.
- Methyl- α -picolinium mercuri-iodide, crystallography of (PORTER), T., 1772.
- 2'-Methyl-5'-isopropylazobenzene, 2:4:6-trinitro-4'-hydroxy- (BORSCHKE), A., i, 625.
- 2-Methyl-6-n- and -iso-propylisochromonic acids, and their picrates and ethyl esters (MUMM and BOHRME), A., i, 439.
- Methylisopropylidenequinide (FISCHER and BAERWIND), A., i, 419.
- α -Methyl-3-isopropylmelic acid, and its esters (RUZICKA and TREBIE), A., i, 39.
- 3-Methylpyrazole-1-benzene-4'-arsinic acid, 5-chloro- (FARNWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 752.
- 3-Methyl-5-pyrazolone-1-benzene-4-arsinic acid (FARNWERKE VORM. MEISTER, LUCIUS, & BRÜNING), A., i, 752.
- 4-Methylpyrazolone-1-benzoic acid, ethyl ester (THOMS and RISEHRT), A., i, 344.
- Methylpyridinium mercuri-iodide, crystallography of (PORTER), T., 1770.
- 1-Methyl-2-pyridone-imide and -methyl-imide (TSCHITSCHIBABIN, R. A. and A. A. KONOWALOWA), A., i, 450.
- 1-Methylpyrrole-2:5-diacetic acid, and its esters (WILLSTATTER and BOMMER), A., i, 122.
- 1-Methylpyrrolidine-2:5-diacetic acid, esters (WILLSTATTER and BOMMER), A., i, 123.
- 5-Methyl-3-pyrrolacetone nitrile. See 5-Methyl-3-cyanomethylpyrrole.
- 2-Methylquinoline (quinalline), synthesis of (MILLS, HARRIS, and LAMBOURNE), T., 1294.
- 2-Methylquinoline, amino- and nitro-derivatives (HAMER), T., 1435.
- 3-Methylquinoline, 2:4-dihydroxy- (GABRIEL and GERHARD), A., i, 441.
- 4-Methylquinoline, preparation of (MIKESKA), A., i, 54.
- methopercchlorate (KÖSIG and TREICHEL), A., i, 738.
- 4-Methylquinoline, 3-nitro- (BADISCHE ANILIN- & SODA-FABRIK), A., i, 507.
- 2-Methylquinoline oxide, 3-amino-4-hydroxy-, 4-hydroxy-, and 3-nitro-4-hydroxy-, and their salts and derivatives (GABRIEL and GERHARD), A., i, 442.
- N-Methyl-2-quinolyene-2-methyl-quinoline, and its picrate (SCHIEBE and ROSSNER), A., i, 452.
- 4-Methyl-6-quinolyl 8-methylamino-butyl ketone, and its salts (RUZICKA and SEIDEL), A., i, 586.

- 7(6) **Methylquinoxaline-2:3-dicarboxylic acid**, 6(7)-chloro- (MORGAN and CHALLENGER), T., 1540.
- Methyl-red**, use of, as an indicator in the estimation of alkaloids (EDERHARD), A., ii, 225.
- Methylrhannosides**, and their acetates (FISCHER, BERGMANN, and RADE), A., i, 95.
- 100 **Methylstilbene** (v. AUWERS and FRÜHLING), A., ii, 232.
- 100 **Methylsulphonebenzoic acid** (SMILES and STEWART), T., 1797.
- 5 **Methyl-2:2:7:7-tetraethyl-*v*-hydrindane-6:8-dione** (FLEISCHER and MELBER), A., i, 251.
- 4 **Methyl-2:2:6:6-tetraethyl-8-isopropyl-*s*-dihydrindane-6:7-dione** (FLEISCHER and MELBER), A., i, 252.
- 5 **Methyltetrahydroarsinoline**, and its derivatives (BURROWS and TURNER), T., 430.
- Methyltetrahydrocarbazole**, and 6-amino-, and 6-nitro-, and their derivatives (PERKIN and PLANT), T., 1834.
- Methyltetrahydro- ψ -demethyl-*d*-scopoline** (GADAMER and HAMMER), A., i, 359.
- Methyltetrahydronaphthalene** (SCHROETER), A., i, 862.
- ethyltetrahydronaphthantraquinone** (SCHROETER), A., i, 862.
- 3 **Methyl-5:6:7:8-tetrahydro-2-naphthylbenzoic acid**, and its ammonium salt (SCHROETER), A., i, 862.
- Methyl-2-thienyl methyl ketone**, semicarbazone of (STEINKOPF and SCHUBART), A., i, 579.
- ethyl-*d*-thiocarbamic acid**, methyl ester (LOSANTICH), T., 765.
- Methylisothiocarbamide**, and its sulphate (ARNDT, MILDE, and ECKERT), A., i, 842.
- Methylthiolbenzoic acid** (SMILES and STEWART), T., 1797.
- Methylthiolnaphthalene** (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 435.
- Methylthioltriphenylcarbinol** (BRAND and STALLMANN), A., i, 665.
- ethylthiolthiourazole**, and its derivatives (ARNDT and MILDE), A., i, 814.
- ethylthiolthiourazole**, imine-, and its salts (ARNDT and MILDE), A., i, 814.
- ethylthiophenmercuri-salts** (STEINKOPF), A., i, 631.
- ethyl-*m*-toluidines**, *di*- and *tri*-nitro- (BRADY and GIBSON), T., 101.
- Methyl-*o*- and -*m*-toluidines**, chloronitro-, and their nitrosoamines (MORGAN and JONES), T., 189.
- Methyl-*o*-toluidinophenylimino-*p*-dimethylaminophenylmethane** (MEISENHEIMER, V. BUDKEWICZ, and KANANOW), A., i, 358.
- Methyl-*o*-toluidinophenyliminophenylmethane**, and its salts (MEISENHEIMER, V. BUDKEWICZ, and KANANOW), A., i, 358.
- 2 **Methyl-2:3-tolylenediamine**, 6-chloro- (MORGAN and JONES), T., 191.
- 3 ***N*-Methyl-3:4-tolylenediamine**, 6-chloro- (MORGAN and CHALLENGER), T., 1542.
- 2 **Methyl-2:3-tolylenediazoimine**, 6-chloro- (MORGAN and JONES), T., 191.
- 7 **Methyluric acid**, and its derivatives (BILTZ, MARWITZKY, and HEYN), A., i, 606.
- 7 **Methyl- ψ -uric acid**, methylation of (BILTZ and ZELINER), A., i, 610.
- 7 **Methyl- ψ -uric acid**, 5-chloro- (BILTZ, MARWITZKY, and HEYN), A., i, 607.
- 7 **Methyl- Δ^4 -isouric acid**, 5-chloro- (BILTZ, MARWITZKY, and HEYN), A., i, 607.
- 9 **Methyl- Δ^7 -isoxanthine**, perbromide of, and 8-bromo- (BILTZ, STRUFE, TOPP, HEYN, and ROHL), A., i, 611.
- 2 **Methylxanthone**, 3-bromo- (ECKERT and SEIDEL), A., i, 863.
- 3 **Methylxanthone**, 1-hydroxy-, and its methyl ether and 2- and 4-nitro-1-hydroxy- (PERKIN), T., 1291.
- Michael reaction**, reversibility of (INGOLD and POWELL), T., 1976.
- Microbes** (*micro-organisms*), cataphoresis of (v. SZENT-GYÖRGYI), A., i, 290.
- microchemistry of (GRIMMER and WIEMANN), A., i, 479.
- producing acetone (BERTHELOT and OSSART), A., i, 909.
- action of, on organic compounds (VERKADE), A., i, 290.
- Microscope**, arrangement of, to examine opaque crystals (FRANÇOIS and LORMAND), A., ii, 493.
- Milk**, chlorine content of, after ingestion of sodium chloride (DENIS and SISSON), A., i, 531.
- iron in, causing erroneous indications of nitrates (REISS), A., ii, 346.
- saline substances and mineral elements in (PORCHER and CHEVALLIER), A., i, 638.
- tryptophan content of (v. FÜRTH and NOBEL), A., i, 74.
- vitamins in (HOPKINS), A., i, 477.
- apparatus for reducing to powder without destruction of vitamins (MCLENDON), A., i, 839.
- goat's, acidity of (SCHULTZ and CHANDLER), A., i, 383.

- Milk**, human and cow's, cholesterol in (WACKER and BECK), A., i, 639.
 detection of lye in (BADE and CABRERA), A., ii, 55.
 estimation of watering and creaming of (ANDOYER), A., ii, 662.
 estimation of catalase in (MACHENS and CORDES), A., ii, 227.
- Mineral sulphides**, nomenclature and classification of (WHERRY and FOSHAG), A., ii, 120.
 estimation of, in water (FAIRCHILD), A., ii, 126.
 water. See under Water.
- Minerals**, graphic method for comparison of (SIMPSON), A., ii, 53.
 exchange of ions on the surface of (TAMMANN), A., ii, 211.
 from limestone quarries of Finland (LAITAKARI), A., ii, 406.
 Japanese, containing rare elements (SHIBATA and KIMURA), A., ii, 269.
 ochreous, analysis of (RAYNAUD), A., ii, 713.
 synthetic silicate (KOENIGSBERGER and MÜLLER), A., ii, 459.
 from Tunis (BUTTENBACH), A., i, 268.
- Mine rescue apparatus**, experiments with (BRIGGS), A., i, 141.
- Mitragyne**, alkaloids from species of (FIELD), T., 887.
- Mitragynine**, and its salts (FIELD), T., 887.
- Mitraversive**, and its hydrochloride (FIELD), T., 887.
- Mixtures**, binary, chemical constitution and thermal properties of (PASCAL), A., ii, 574.
- Mnium cuspidatum*, saponarin in (KOZLOWSKI), A., i, 840.
- Moduli**, law of, and electrolytic dissociation (BERNAOLA), A., ii, 285.
- Molecular association** in non-aqueous solutions (WALDEN), A., ii, 22.
 attraction (JARVINEN), A., ii, 167.
 compounds, constitution of (PEIFFER), A., ii, 501.
 formation of, by unsaturated compounds (MASS and RUSSELL), A., i, 761.
 organic (GIUA, MARCELLINO, and CURTI), A., i, 193; (GIUA and GIUA), A., i, 592.
 conductivity, limiting value for (WALDEN), A., ii, 423.
 of sulphonium compounds in acetone (RAY and KUMAR), T., 1643.
 energy. See Energy.
 refraction. See Refraction.
 structure, relation between colour and (MEISENGEIMER), A., ii, 364.
- Molecular structure of gases** (RANKINE), A., ii, 192; (KIRSCH), A., ii, 193.
 volume. See Volume.
 weights. See Weights, molecular.
- Molecules**, existence of (v. ANTROPOFF), A., ii, 101.
 structure of (THOMSON), A., ii, 252.
 in relation to their specific heat (PARTINGTON; RANKINE), A., ii, 690.
 dimensions of (BRAGG and BELL), A., ii, 689.
 double, dissociation of (VAN LAAR), A., ii, 83.
 gaseous non-spherical, collisions between (RANKINE), A., ii, 584.
- Molluscs**, respiration in (BERKELEY), A., i, 524.
- Molybdenum**, arc spectra of (KIESS and MEGGERS), A., ii, 4.
- Molybdic acids**, and their salts and derivatives (POSTERNAK), A., ii, 51, 117, 118, 341; (FORSSEN), A., ii, 205, 265, 340.
- Molybdenum**, estimation of (NAKAZONO), A., ii, 596.
- Molybdomalic acid**, ammonium and sodium salts (DARMOIS), A., i, 532.
- Monazite** from Bengal (TIPPER), A., ii, 269.
 from Japan (SHIBATA and KIMURA), A., ii, 269.
- Montan wax**. See Wax.
- Monticellite**, crystals of, from steel-works slag (HALLINON and WHITELEY), A., ii, 702.
- Morin**, distinction between quercitrin and (JUSTIN-MUELLER), A., ii, 69.
- Morphine**, compound of phenylethylbarbituric acid with (SOCIETY OF CHEMICAL INDUSTRY IN BANG), A., i, 354.
 detection of (GANASSINI), A., ii, 471.
 detection of, microchemically (KOLLER), A., ii, 71.
 estimation of, in opium (UGARTE), A., ii, 225, 260.
- Morphinecarboxylic acid**, ethyl ester, and its derivatives (GADAMER and KNOCH), A., i, 581.
- Mosla japonica*, constituents of the essential oil from (MURAYAMA), A., i, 875.
- Moslene**, and its derivatives (MURAYAMA), A., i, 875, 876.
- Moth**. See Silkworm moth.
- Moulds**, utilisation of nitrates by (KOSTICHEV and TSVETKOVA), A., i, 83.
 decomposition of pyruvic acid by (NAGAYAMA), A., i, 836.
 fermentation of sugar by (COHEN), A., i, 150.

Moulds, formation of sugar by (KOSTICHEV), A., i, 83.

Mucic acid, oxidation of, and its salts and derivatives (BERGMANN), A., i, 540.

Mucin, precipitation of, by acids and by zinc salts (DEJUST), A., i, 199.

Muscarine, nature of (WEINHAGEN), A., i, 192.

Nucleic acid and muscle extracts, chemical and physical properties of (QUAGLIARIELLO), A., i, 831.

effect of low temperature on the properties of (FOSTER and MOYLE), A., i, 687.

supply of energy in the contraction of (HARRIS and HILL), A., i, 527.

transformation of energy in (MEYERHOFF), A., i, 76.

effect of subminimal stimuli on chemical changes in (PARNAS and LASKAMINTZ), A., i, 831.

carbohydrate metabolism of (PARNAS), A., i, 831, 832.

creatine in (SHANKS; HANMETT), A., i, 530.

creatine and creatinine in extracts of (HANMETT), A., i, 906.

extractives of (SMORODINCEV), A., i, 152.

role of lactic acid in (WEBER), A., i, 635.

lactacidogen formation in (EMBDEN and LACQUE; EMBDEN, SCHMITZ, and MEINCKE), A., i, 528; (EMBDEN, GRAFE, and SCHMITZ; WECHSELMANN; ADLER; ADLER and GÜNZBURG; LYDING; COHN; EMBDEN and ISAAC; ADLER and ISAAC; LAWACZEK), A., i, 529.

oxygen consumption of (PARNAS), A., i, 832.

formation and distribution of phosphoric acid in (EMBDEN and GRAFE; EMBDEN and ADLER; LYDING; PANAJOTAKOS; ADAM), A., i, 529.

selective absorption of potassium by (MITCHELL and WILSON), A., i, 830.

smooth, rigor mortis in (HIRSCH), A., i, 478.

of worms, action of lactones on (LAUFENSCHLAGER), A., i, 907.

estimation of lactic acid in (RIESENFELD), A., ii, 68.

luscovite (SHANNON), A., ii, 459.

Mustard gas. See Diethyl sulphide, *BB'-dichloro*.

Mustard oil, constituents of (KUNZ-KRAUSE), A., i, 320.

Mustard seed, substitutes for (VIEHÖRVER, CLEVENGER, and EWING), A., i, 212.

Mutton-bird oil, investigation of (CARTER), A., i, 833.

Myristic acid, benzyl ester (SHONLE and ROW), A., i, 341.

Myristicin, compound of nitrosobenzene with (ALESSANDRI), A., i, 730.

Mytilitol, and its derivatives (ACKERMANN), A., i, 764.

N.

Nazgite from Japan (SHIBATA and KIMURA), A., ii, 269.

3:4-Naphthafuran-1:2-dione (4:5-benzocoumaran-2:3-dione) (FRIES and FRELLSTEDT), A., i, 431.

3:4-Naphthafuran-2-one (4:5-benzocoumaran-3-one), and its derivatives (FRIES and FRELLSTEDT), A., i, 431.

5:8-Naphthafuran-2-one (6:7-benzocoumaran-3-one), 4-bromo-, and its derivatives (FRIES and FRELLSTEDT), A., i, 431.

2-Naphthaldehyde, 1:8-dihydroxy-, and its phenylhydrazone (HELLER and KRETZSCHMANN), A., i, 459.

Naphthaldehydes, dihydroxy-, and their derivatives (MORGAN and VININO), T., 177.

Naphthalene, constitution of (v. AUWERS and FRÜHLING), A., ii, 230.

formula of (v. WEINBERG), A., i, 781.

heat of combustion of (HENNING), A., ii, 379.

freezing point curve of the equilibrium of *o*-cresol with (RHODES and HANCE), A., i, 857.

solubility of, in various solvents (HILDEBRAND and JENKS), A., ii, 23.

solubility of, in aqueous solutions of alcohols and fatty acids (CHRISTIANSEN and ARRHENIUS), A., ii, 385.

solubility of, in caoutchouc (BRUNI), A., i, 352.

electrolytic oxidation of (OXO), A., i, 334.

sulphonation of (FIENZ and SCHMID), A., i, 409.

derivatives, spectrochemistry of (v. AUWERS and FRÜHLING), A., ii, 230.

Naphthalene, 1:8-dihydroxy-, preparation and derivatives of (HELLER and KRETZSCHMANN), A., i, 458.

nitro-derivatives, estimation of nitrogen in (BRINTON, SCHERTZ, CROCKETT, and MERKEL), A., ii, 592.

tri- and *tetra*-nitro derivatives, additive compounds of arylamines with (SCDDBOROUGH, PICTON, and KARVE), A., i, 557.

- Naphthalene**, *β*-tetranitro-, additive compounds of (KARVE and SUBBOROUGH), A., i, 658.
- 4-β-Naphthaleneazo-5-amino-2-phenyl-1:2:3-benzotriazole** (SCHMIDT and HAGENBÖCKER), A., i, 898.
- β-Naphthaleneazo-1:3-diketohydrindene** (DAS and GHOSH), A., i, 897.
- Naphthalenedisulphonylbis-1:4-naphthylenediamines** (MORGAN and CRIST), T., 606.
- β-Naphthalenesulphonic acid**, sodium salt, solubility of, in sodium chloride and sulphate (COOKE), A., i, 334.
- aniline salt** (VAN DUIN), A., ii, 221.
- Naphthalenesulphonic acids**, detection of (AMBLER and WHERRY), A., ii, 63; (AMBLER), A., ii, 136.
- ferrous and naphthylamine salts of** (AMBLER), A., i, 21.
- N-Naphthalenesulphonyl-β-2-furyl-α-alanine** (SASAKI), A., i, 808.
- Naphthalene-α- and -β-sulphonyl-1:4-naphthylenediamines** (MORGAN and CRIST), T., 605.
- Naphthalene-3:6:8-trisulphonic acid**, 1-nitro-, salts of (FIERZ and SCHMID), A., i, 409.
- Naphthaphenazine**, 5-amino-, 7-methochloride, preparation of (COHEN and CRABTREE), T., 2662.
- αβ-Naphthaphenothiazine S-oxide**, 10-nitro-, (LUDWIG-SEMELEIC), A., i, 690.
- βa-Naphthaphenothiazine**, nitro-derivatives (LUDWIG-SEMELEIC), A., i, 448.
- αβ-Naphthaphenothiazonium chloride**, 5-chloro-8:10-diamino-, (LUDWIG-SEMELEIC), A., i, 690.
- βa-Naphthaphenothiazonium chloride**, diamino-, (LUDWIG-SEMELEIC), A., i, 448.
- 7:12-Naphthaphenoxazine** (*βa*-form), and its 5-anil (LUDWIG-SEMELEIC), A., i, 448.
- βa-Naphthaphenoxazine-5-anil**, and its salts (LUDWIG-SEMELEIC), A., i, 690.
- 7:12-Naphthaphenthiazines**, and their salts and derivatives (KEHRMANN and CHRISTOPoulos), A., i, 449.
- α-α-Naphthaphthalein**, use of, as an indicator (CsÁNYI), A., ii, 270.
- α-Naphthaquinone**, 2:3-dichloro-, preparation and reactions of, and 3-chloro-2-amino-, (ULLMANN and ETTISCH), A., i, 269.
- α-Naphthaquinone-1:2-anthraquinone-dioxime** (ULLMANN and ETTISCH), A., i, 270.
- α-Naphthaquinonebenzodioxime** (ULLMANN and ETTISCH), A., i, 270.
- 1:2-Naphthaquinone-1-oxime**, hexamminecobaltic salt, and 7-hydroxy-, 1-cobaltic salt (MORGAN and SMITH), T., 708.
- 1:2-Naphthaquinone-2-oxime**, 8-hydroxy-, (HELLER and KRETZSCHMANN), A., i, 458.
- 1:2-Naphthaquinone-1-oxime-3-carboxylic acid**, cobaltic salts (MORGAN and SMITH), T., 709.
- 1:2-Naphthaquinone-2-oxime-3:6-di-sulphonic acid**, 8-amino-, acetyl derivative, and 8-hydroxy-, salts of (MORGAN and SMITH), T., 712.
- 1:2-Naphthaquinone-2-oxime-4-sulphonic acid**, cobaltic and 8-naphthylamine salts (MORGAN and SMITH), T., 710.
- 1:2-Naphthaquinone-2-oxime-3-sulphonic acid**, 6-amino-, acetyl derivative, salts of (MORGAN and SMITH), T., 711.
- α-Naphthaquinonephenoxazines** (ULLMANN and ETTISCH), A., i, 270.
- α-Naphthaquinone-2-pyridinium anhydride**, 3-hydroxy-, and its derivatives (ULLMANN and ETTISCH), A., i, 269.
- α-Naphthaquinonethioxanthone** (ULLMANN and ETTISCH), A., i, 270.
- Naphthazine-2-pyridinium chloride**, 1-hydroxy-, and its derivatives (ULLMANN and ETTISCH), A., i, 269.
- Naphthenes**, manufacture of (WEIZMANN and LEFG), A., i, 712.
- Naphthimazoles**, preparation of (FISCHER, DIETRICH, and WEISS), A., i, 57.
- α-Naphthoic acid**, ethyl ester, reduction of (DE POMMEREAU), A., i, 567.
- α-Naphthol**, electrolytic oxidation of (ONO), A., i, 726.
- Naphthols**, reaction of, with bisulphides (FRIEDLÄNDER), A., i, 443.
- Naphtholsulphonic acids**, amino-, estimation of, volumetrically (LEVI), A., ii, 599.
- β-Naphthoxide**, sodium, velocity of reaction of ethyl iodide and (COX), T., 149.
- β-Naphthoxide**, 1-nitroso-, See 1:2-Naphthaquinone-1-oxime.
- α-Naphthoylebenzoic acid**, α-4-hydroxy-, and its salts (SCHOLL, SEER, and ZINKE), A., i, 678.
- α-Naphthoisotriazole-1-carboxylic acid**, ethyl ester (DIELS), A., i, 281.
- 5(2':1':3')-Naphthotriazolyl-2-phenyl-1:2:3-benzotriazole** (SCHMIDT and HAGENBÖCKER), A., i, 898.

- Naphthylamines**, catalytic preparation of methyl derivatives of (MAILHE and DE GONON), A., i, 108.
 action of *o*-chlorobenzaldehyde on (MAYER and BANS), A., i, 175.
 reaction of, with bisulphites (FRIEDLÄNDER), A., i, 443.
- Naphthylaminesulphonic acids**, manufacture of (SOUTH METROPOLITAN GAS Co. and STANIER), A., i, 504.
- 1-β-Naphthylaminooanthraquinone** (ULLMANN), A., i, 424.
- 1-Naphthylaminocamphor**, 4-amino-, and its hydrochloride (FORSTER and SAVILLE), T., 797.
- 9-β-Naphthylamino-9:10-dihydroanthracene** (BARNETT and COOK), T., 911.
- 9-Naphthylaminomethylene-epi-camphor** (PERKIN and TITLEY), T., 1092.
- Naphthyl-4-bromobismuthine** (CHALLENGER and ALLPRESS), T., 919.
- 3-Naphthyl bromomethyl ketone**, 4-bromo-1-hydroxy- (FRIES and FRELLSTEDT), A., i, 431.
- 1-Naphthylcarbimide**, action of, with taurine (SCHMIDT), A., i, 652.
- 3-Naphthylglyoxylic acid**, 4-bromo-1-hydroxy- (FRIES and FRELLSTEDT), A., i, 432.
- Naphthylideneanilines**, dihydroxy- (MORGAN and VINING), T., 179.
- 2-Naphthylmethyl-*o*-benzoic acid**, and its salts (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 668.
- 9- α - and - β -Naphthylmethylfluorenes** (SIEGLITZ and JASSOY), A., i, 792.
- 9- α - and - β -Naphthylmethylfluorenes**, 2:7-dibromo- (SIEGLITZ), A., i, 111.
- Naphthyl methyl ketones**, hydroxy-, and their derivatives (FRIES), A., i, 423.
- α - and β -Naphthylloxalimino-chlorides** (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 435.
- 1- α -Naphthyl-4-pyridone** (SMIRNOV), A., i, 595.
- Narcotics**, hydrocarbons as (FÜHNER), A., i, 478.
- Naumannite** from Idaho (SHANNON), A., ii, 52.
- Neosarphenamine**. See Neosalvarsan.
- Neon**, atmospheric, production of luminosity in (HORTON and DAVIES), A., ii, 422.
 series spectrum of (LANDÉ), A., ii, 669.
 cathode potential fall in (COMPTON and VAN VORHIS), A., ii, 7.
 synthetic, possible origin of (LO SERDO), A., ii, 331.
- Neosalvarsan**, action of mercuric chloride on (BINZ and BAUER), A., i, 629.
- Neosalvarsan**, analysis of (RAIZISS and FALKOV; MACALLUM), A., ii, 420.
- Neotocite** from Washington (PARDEE, LARSEN, and STEIGER), A., ii, 211.
- Neotruxinic acid**, and its salts and derivatives (STOERMER and LAAGE), A., i, 180, 182.
- Nephelometer**, new (KLEINMANN), A., ii, 56.
 use of the turbidimeter instead of the (DENIS), A., ii, 555.
- Nephelometer-colorimeter**, improvements in (KÖBER and KLETT), A., ii, 555.
- Nernst's theorem** and quantum weight (SCHOTTKY), A., ii, 179.
- Nerves**, production of ammonia in (TASHIRO), A., i, 635.
- Nervous system**, chemical and biochemical investigations on (PIGHINI), A., i, 238.
- Neurine trihydrate** (MEYER and HOPPE), A., i, 851.
- Nevralteine**, detection of, with quinine salts (CARDINI), A., ii, 664.
- Nickel**, meteoric and terrestrial, atomic weights of (BAXTER and PARSONS), A., ii, 338.
 isotopes of (LORING), A., ii, 570.
 physical properties of (MERICA), A., ii, 117.
 ultra-violet spark spectrum of (MIL-LIKAN), A., ii, 3.
 vacuum spark spectrum of (MIL-LIKAN, BOWEN, and SAWYER), A., ii, 609.
 passivity of (DE BRUYS), A., ii, 153.
 deposition of, on aluminium (MAZUR), A., ii, 50.
 catalytic activity of (KELBER), A., ii, 630.
 action of fused sodium hydroxide on (WALLACE and FLECK), T., 1847.
- Nickel alloys** with chromium and iron (CHEVENARD), A., ii, 336.
 with copper, activity of (NOWACK), A., ii, 208.
 with tungsten (VOGEL), A., ii, 512.
- Nickel bases** (*nickelannines*), complex salts of (EPHRAIM and MÜLLER), A., ii, 456.
- Nickel fluoride**, chemistry and crystallography of (EDMINSTER and COOPER), A., ii, 115.
- Nickel organic compounds**—
 carbonyl, preparation of (TASSILLY, PÉNAU, and ROUX), A., ii, 699.
- Nickel detection**, estimation, and separation—
 detection and estimation of (MATSUI and NAKAZAWA), A., ii, 219.

- Nickel** detection, estimation, and separation:—
 estimation of, volumetrically (STANLEY), A., ii, 352.
 estimation of, in cobalt steel (LUNDELL and HOFFMANN), A., ii, 561.
 estimation of, in nickel-plating (KOELSCH), A., ii, 597.
 separation of cobalt and (WHITBY and BEARDWOOD), A., ii, 562.
- Nickel steel**, electrical resistance of (PORTERVIN), A., ii, 236.
 stabilisation of (GUILLAUME), A., ii, 50.
- Nicotine**, colour reaction of (SANCHEZ), A., ii, 719.
- Niton** (*radium emanation*), disintegration of (BOTHE and LECHNER), A., ii, 617.
 effect of, on the function of cells (ENGELMANN), A., i, 526.
- Nitration** (WIELAND and RAHN), A., i, 782.
- Nitric oxide**. See Nitrogen dioxide.
- Nitriles**, action of hydrazine on (MÜLLER and HERDEGEN), A., i, 741.
 condensation of thioamides and (ISHIKAWA), A., i, 720.
- iso***Nitriles** (PASSERINI), A., i, 743, 895.
- p-iso***Nitritroazobenzene**. See *p*-Carbilyaminobenzene.
- $\beta\beta'\beta''$ -Nitritotripropionic acid**, ethyl ester (RUCICKA and FORNAIER), A., i, 53.
- Nitroamines**, and their derivatives (ROWE), A., i, 412.
- Nitro-compounds**, heats of combustion and formation of (GAERNER and ABERNETHY), A., ii, 435.
 reduction of, with iron (POMERANZ), A., i, 725.
 aromatic (GIUA), A., i, 198, 551; (GIUA and ANGELETTI), A., i, 556; (GIUA and GIUA), A., i, 858.
 reduction of (KORCZYNSKI and PRASECKI), A., i, 517; (MOORE), A., i, 742.
 toxic action of (LIPSCHITZ), A., i, 203.
 emulsified, reduction of (LAPWORTH and PEARSON), T., 765; (HAWORTH and LAPWORTH), T., 768.
 colour reactions of (RUDOLPH), A., ii, 604.
- Nitroform**, substituted derivatives, colorations produced by (GRAHAM and MACBETH), T., 1362.
 halogen derivatives of (MACBETH and PRATT), T., 354.
- Nitrogen**, pure, preparation of, apparatus for (WARAN), A., ii, 546.
 band spectra of (L. and E. BLOCH), A., ii, 529.
 gravitational displacement of bands of, in the solar spectrum (GREBE and BACHEM), A., ii, 143.
 active, luminosity of (v. ANGERER), A., ii, 257; (ZENNECK), A., ii, 258.
 effect of point discharge in (PIKANI and LAX), A., ii, 197.
 radiating potentials of (SMITH), A., ii, 77.
 physical properties of, at the boiling point (GEROLD), A., ii, 585.
 quadrupolar moment for (KEESOM), A., ii, 327.
 fixation of, by bacteria (WHITING and SCHOONOVER), A., i, 208.
 by the Bucher cyanide process (POSNJAK and MERWIN), A., i, 500.
 in sea water (MOORE, WHITLEY, and WEBSTER), A., i, 211.
 explosion of acetylene and (GAERNER and MATSUO), T., 1903.
 rate of excretion of (McELROY and POLLOCK), A., i, 531.
 amino-, in urine (CIACCO), A., i, 831.
 protein and residual, in blood serum (QUAGLIARIELLO), A., i, 73.
- Nitrogen oxides**, vacuum spectra of (BAIR), A., ii, 362.
 absorption of, by nitric and sulphuric acids (SANFOURCHE), A., ii, 504.
 equilibrium of, with nitric acid solutions (BURDICK and FREED), A., ii, 313.
 additive reactions with, in organic chemistry (WIELAND), A., i, 552; (WIELAND and BLUMICH), A., i, 552, 554; (WIELAND and HENDEL), A., i, 553.
 estimation of, in mixed gases (TAYLOR), A., ii, 128.
- nitroxide* (*nitrous oxide*) preparation of (HOFMANN and BUEH), A., ii, 43.
 similarity in molecular structure of carbon dioxide and (RANKIN), A., ii, 192.
- dioxide* (*nitric oxide*), nitration of aromatic compounds with (WIELAND, REISENERGER, BERNHEIM and BÖHM), A., i, 778.
- per-* or *tetr-*oxide, preparation of, from air (GENELIN), A., ii, 105.
 reaction between copper and (TARTAR and SEMON), A., ii, 536.
 estimation of, in air (MOIR), A., ii, 345.

Nitrogen pentoxide, photochemical and thermal decomposition of (DANIELS and JOHNSTON), A., ii, 249.

Nitric acid, heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.

distillation of, and of its mixtures with sulphuric acid (PASCAL and GARNIER), A., ii, 504.

equilibrium of aqueous solutions of, with oxides of nitrogen (BURDICK and FREED), A., ii, 313.

action of, on copper (BAGSTER, T.), 82.

action of mixtures of sulphuric acid and, on metals (PASCAL, GARNIER, and LABOURASSE), A., ii, 585.

decomposition of, in organic nitrations (RICE), A., i, 102.

reduction of aryl derivatives of (MEYER and REPPE), A., i, 235.

action of, on phenols and their ethers (MEYER and ELBERS), A., i, 240.

and its salts, removal of, by means of ethylalcohol (SCHNEIDWIND), A., ii, 129.

esters, action of Grignard reagents on (HEPWORD), T., 251.

detection of (LONGINESCU and CHABORSKI), A., ii, 411.

detection and estimation of (ANON.), A., ii, 558.

estimation of (WINKLER), A., ii, 274.

estimation of water in mixtures of sulphuric acid and (BERL and v. BOLTENSTERN), A., ii, 705.

Nitrates, manufacture of (BOULANGER), A., i, 836.

potential of the change from nitrites to (KLEMENC), A., ii, 297.

reduction of, by means of Scales's zinc-copper couple (HARRISON), A., ii, 345.

detection of, with diphenylamine (WEINHAGEN), A., ii, 346.

detection of, in presence of nitrites (OLIVERI-MANDALÀ), A., ii, 346.

estimation of, by Ulsch's method (MACH and SINDLINGER), A., ii, 594.

estimation of, in bismuth salts (McLACHLAN), A., ii, 518.

estimation of, in plant tissues (STROWD), A., ii, 59.

estimation of nitrogen in (ARNOLD), A., ii, 58; (NOLTE), A., ii, 518.

Nitrous acid, action of, with hydrazine and with azoimide (OLIVERI-MANDALÀ), A., ii, 346, 694.

Nitrogen:—

Nitrites, potential of the change from, to nitrates (KLEMENC), A., ii, 297.

effect of light on the reduction of (BAUDISCH), A., ii, 290.

reactions of, with weak bases (HOFMANN and BUHK), A., ii, 43.

estimation of, by diazotisation (MUEHLERT), A., ii, 594.

estimation of, electrometrically (HENDRIXSON), A., ii, 651.

estimation of, in plant tissues (STROWD), A., ii, 59.

estimation of nitrogen in (ARNOLD), A., ii, 58.

Nitrogen detection and estimation:—

detection of, in organic compounds (ZEGHELS), A., ii, 557.

estimation of (BRINTON, SCHERTZ, CROCKETT, and MERKEL), A., ii, 592.

estimation of, gasometrically (STEHLE), A., ii, 557.

estimation of, by Kjeldahl's method (CITRON), A., ii, 58; (PHELPS; PHELPS and DAUDT; COCHRANE), A., ii, 127; (MESTREZAT and JANET), A., ii, 411; (DAUDT), A., ii, 462.

estimation of, microchemically (LÜHRIG; STANEK), A., ii, 557; (POLONOVSKI and VALLEE), A., ii, 593.

estimation of, microchemically, in agricultural materials (GELMANN), A., ii, 128.

estimation of, in blood (STEHLE), A., ii, 128.

estimation of, in fertilisers (FROIDEVAUX and VANDENBERGHE), A., ii, 462.

estimation of, in nitrates (NOLTE), A., ii, 518.

estimation of, in urine (MESTREZAT and JANET), A., i, 477; ii, 58.

estimation of nitrates and nitrites in (ARNOLD), A., ii, 58.

amino-, estimation of, in organic substances (WILLARD and CAKE), A., ii, 128.

"Nitrolime." See Calcium cyanamide.

Nitron fluorosulphonate (TRAUBE and REICKE), A., ii, 539.

Nitronic derivatives (ALESSANDRI), A., i, 570.

Nitroprussic acid, and its salts (BURNOWS and TURNER), T., 1450.

Nitroprussides, constitution of (BURNOWS and TURNER), T., 1450.

Nitroso compounds, condensation of *p*-nitrobenzyl chloride with (BARROW and GRIFFITHS), T., 212.

Nitrous acid. See under Nitrogen.

Nomenclature of organic compounds (WHEELER), A., i, 297.

Nomograms for chemical calculations (BADINI), A., ii, 395.

Non-electrolytes, coagulation of colloids by (KLEIN), A., ii, 684.

Nonylcarbamide, α -bromo- (TIFFENEAU and ARDELY), A., i, 775.

Nopic acid, methyl ester (ÖSTLING), A., i, 346.

Norharman (4-carboline), synthesis of, and its salts (KERMACK, PERKIN, and ROBINSON), T., 1602.

Norharmol (KERMACK, PERKIN, and ROBINSON), T., 1619.

Norharmocarboxylic acid, and its sulphate (KERMACK, PERKIN, and ROBINSON), T., 1618.

Norvaline, and its isomerides and derivatives (ABDERHALDEN and KURTEN), A., i, 547.

Novocaine, excretion of, in urine (THIEULIN), A., i, 206.

Nucleic acid (MOREL), A., i, 641.

preparation of, from animal tissues, and its analysis (LEVENE), A., i, 821.

complex (FEULGEN), A., i, 76.

from the pancreas (HAMMARSTEN), A., i, 200.

metabolism. See Metabolism.

from yeast. See Yeast-nucleic acid.

See also Thymus-nucleic acid.

Nucleic acids, preparation of (FEULGEN), A., i, 138.

and their action in vitro (DOYON), A., i, 521.

cleavage of (STIEDEL and PEISER), A., i, 136.

Nuclein metabolism. See Metabolism.

Nucleotides, action of liver extract on (THANNHAUSER and OTTENSTEIN), A., i, 526.

Nutrition, value of amino-acids in (SURE), A., i, 526.

experiments on carbohydrates in (DESCREZ and BERRY), A., i, 141.

effect of water-soluble vitamins on (KARR), A., i, 5.

O.

Oak, volatile constituents of the leaves of (FRANZEN), A., i, 644.

tannin from the bark of (FEIST and SCHÖN), A., i, 117.

poison. See *Rhus diversiloba*.

Obituary notices :—

Sir William de Wiveleslie Abney, T., 529.

Henry Bassett, T., 532.

Obituary notices :—

Albert Edward Bellars, T., 2120.

Edward John Bevan, T., 2121.

Bertram Blount, T., 545.

Alexander Wynter Blyth, T., 545.

John Cannell Cain, T., 539.

Sir Lazarus Fletcher, T., 547.

Armand Gautier, T., 537.

Edward Kinch, T., 2123.

Henry Rondel Le Sueur, T., 2125.

George Blundell Longstaff, T., 2127.

Edmund James Mills, T., 2130.

David Henry Nagel, T., 551.

William Odling, T., 553.

Spencer Percival Umfreville Pickering, T., 564.

William Herbert Pike, T., 539.

John Ruffe, T., 541.

John Shields, T., 569.

Charles Simmonds, T., 542.

Bertram James Smart, T., 544.

Richard Henry Vernon, T., 2132.

Leonard Philip Wilson, T., 571.

Ochres, analysis of (RAYNAUD), A., ii, 713.

Ocimum gratissimum, constituents of oil from (ROBERTS), A., i, 679.

Octadecaclophenic acid (ASCHAN), A., i, 513.

Octahydroanthracene (TETRALIN G. m. b. H.), A., i, 410.

1:1'-Octahydrodinaphthyl, 4:4'-diamino- (TETRALIN G. m. b. H.), A., i, 406.

Octahydroferriacetic acid, metallic salts (LUCK), A., i, 232.

Octahydrophenanthrene (TETRALIN G. m. b. H.), A., i, 410.

Octamethoxytetraphenylhydrazine di-perchlorate (MEYER and REFFE), A., i, 236.

α -Octamylose (KARRER), A., i, 707.

n-Octane, melting point of (DE FORCRAND), A., ii, 85.

Octaphenyl-diiodosilicotetrane (KIPPING and SANDS), T., 839.

Octaphenylsilicotetrane oxides (KIPPING and SANDS), T., 841.

Octoic acid, α -amino-, and α -hydroxy-, ethyl esters (MARVEL and NOYES), A., i, 16.

Odour, relation between chemical constitution and, and the mechanism of its perception (TSCHIRCH), A., i, 735.

Oils, animal marine, hydrogenation of (MARCELET), A., i, 646.

drying, oxidation of (COFFET), T., 1152, 1408.

essential. See Oils, vegetable.

etheral. See Oils, vegetable.

fatty, size of molecules of, and their molecular solutions (WOOD), A., ii, 575.

- Oils, fatty, solubility of organic acids in** (VERKADE), A., i, 290.
mineral. See Petroleum.
vegetable, physical constants and characteristic derivatives of the constituents of (ROURE-BERT-RAND FILS), A., i, 797.
occurrence of moslene in (MURAYAMA), A., i, 876.
estimation of alcohols and phenols in (VAN URK), A., ii, 660.
estimation of the iodine value of (MARGOSCHES and BARU), A., ii, 716.
estimation of sulphur in (HAUSER), A., ii, 517.
Oleic acid, lecture experiment to show the reduction of, to stearic acid (FRULGEN), A., ii, 448.
benzyl ester (SHONLE and ROW), A., i, 341.
 α -glucose ester (HESS, MESSMER, and KLETZL), A., i, 806.
Olbanols, isomeric (FROMM and KLEIN), A., i, 797.
Oligodynamic hemolysis (HAUSMANN and KERL), A., i, 143; (WERNICKE and SORDELLI), A., i, 758; (FALTA and RICHTER-QUITZNER), A., ii, 335.
Oligodynamy (ACKL), A., i, 147; (DOERN), A., i, 209.
Olive oil, surface tension between water and (HARTIDGE and PETERS), A., ii, 87.
Opacity of liquids, measurement of (HOLKER), A., i, 633.
Opianic acid phenylmethylhydrazone (FARGHER and PERKIN), T., 1744.
***m*-Opianic acid, and its derivatives** (FARGHER and PERKIN), T., 1724.
Opium, estimation of morphine in (UGARRE), A., ii, 225, 360.
Optical activity, relation between colour and, of organic compounds (LONGOBARDI), A., ii, 288.
rotation and chemical constitution (B. K. and M. SINGH and LAU), T., 1971.
numerical values of (LEVESE), A., ii, 613.
of mixtures of sugars (VOSBURGH), A., ii, 233.
Optically active compounds, absorption spectra and rotatory dispersion of (RUPF, KRETHLOW, and LANGBEIN), A., ii, 473.
Optochin. See Ethyldihydrocpreine.
Orchids, alkaloids in (WESTER), A., i, 486.
glucosides from (DELAUNEY), A., i, 296.
Orcinol, action of cyanogen and hydrogen chloride on (KARRER and FERLA), A., i, 841.
Orcinol, diamino-, hexa-acetyl derivative (HENRICH and ROSSTEUSCHER), A., i, 888.
Oreyglyoxylic acid, derivatives of (KARRER and FERLA), A., i, 342.
Organic compounds, nomenclature of (WHEELER), A., i, 297.
relation between colour and optical activity of (LONGOBARDI), A., ii, 288.
chemical constitution and crystallography of (SCHLEICHER), A., ii, 25.
co-ordination theory of the structure of (PICCARD and DARDEL), A., ii, 394.
measurement of the stability of (v. EULER and LAURIN), A., ii, 498.
mobility of atoms and groups in (MONTAGNE), A., i, 89.
freezing points of (TIMMERMANS), A., ii, 430, 431; (TIMMERMANS and MATTAAR), A., ii, 622.
thermochemical data of (SWIENTOSLAWSKI), A., ii, 679.
catalytic hydrogenation of (KELBER), A., ii, 630, 688.
elimination of carbon dioxide from (KUNZ-KRAUSE and MANICKE), A., i, 513.
removal of halogens from (HEDELIUS), A., ii, 182.
decomposition of hydrogen peroxide by (MORGULIS and LEVINE), A., ii, 17.
with carbon double bonds, additive products of, with acids (KERRMANN and EFFRONT), A., i, 348.
oxidation of, with chromic acid, (CORDEBARD), A., ii, 290.
containing halogens, reduction of (BRAND), A., i, 783, 786.
effect of, on the development of plants (CIAMICIAN and RAVENNA), A., i, 483.
detection of nitrogen in (ZENCHELIS), A., ii, 557.
estimation of arsenic in (ROBERTSON), A., ii, 275.
estimation of chlorine in (WEITZEL), A., ii, 591.
estimation of chlorine, phosphorus and sulphur in (GREGOIRE and CARPMAUX), A., ii, 461.
estimation of iron in, microchemically (NICLOUX and WELTER), A., ii, 523.
estimation of mercury in (BAUER), A., ii, 657.
combustion method for estimation of organic matter and organic carbon in (READ), A., ii, 348.

- Organism**, animal, effect of salts on oxidation in the (BING), A., i, 286.
 methylation in the (TOMITA), A., i, 834.
 lower animal and plant, effect of colloidal metals on (V. PLOTNO), A., i, 82.
- Organs**, animal and plant, detection of metals and of arsenic in (KEILHOLZ), A., ii, 708.
- Orientite** (HEWITT and SHANNON), A., ii, 460.
- Orsellinic acid**, tetra-acetyl glucose ester (KARRER, BAUMGARTEN, GÜNTHER, HAIDER, and LANG), A., i, 263.
- Ortho-lase** containing barium (TSCHERMAK), A., ii, 121.
 potassium in solutions of, in relation to its availability to plants (BREAZEALE and BRIGGS), A., i, 358.
- Orthoformic acid**, ethyl ester, hydrolysis of (SKRABAL and RINGER), A., ii, 581.
- Osmium**, L-series spectrum of (DAUVILLIER), A., ii, 669.
 tetroxide, reduction of, by fats (PARTINGTON and HUNTINGFORD), A., ii, 514.
 action of hydrochloric acid on (REMY), A., ii, 267.
- Osmosis** with gold-beaters' skin membranes (BARTELL and MADISON), A., ii, 90.
 electrical. See Electrical osmosis and Electro-endosmosis.
- Osmotic pressure**, kinetic theory of (HERZFELD), A., ii, 384.
 regulation of (PALMER, ATCHLEY, and LOEB), A., ii, 534.
 of strong solutions (CERNATESCO), A., ii, 576.
 and toxicity of soluble salts in soils (GREAVER and LUND), A., i, 758.
- Otoba butter** (BAUGHMAN, JAMIESON, and BRAUNS), A., i, 296.
- Quabain**, distinction between strophanthin and (RICHAUD), A., ii, 601.
- Overvoltage** (NEWBURY), T., 477; (DUNNILL), T., 081; (MACINNES), A., ii, 11.
- Oxalic acid**, preparation of, from lignin (HEUSER and WINSVOLD), A., i, 845.
 in young leaves (BAU), A., i, 838.
 reaction of iodic acid with (LEMOINE), A., ii, 100, 500, 540.
 biochemical behaviour of (SIRBURG and VIETKNESE), A., i, 145.
 metallic salts, decomposition of (HERSCHKOWITSCH), A., i, 495.
 salts, physiological action of (HARA), A., i, 478.
- Oxalic acid**, calcium salt, opacity of suspensions of (HOLKER), A., i, 633.
 potassium salts, decomposition of, by solvents (SABALITSCHKA), A., ii, 401.
 potassium hydrogen salt, use of, as a standard in alkalimetry (OSAKA and ANDO), A., ii, 132.
 hydrolysis of esters of homologues of (SKRABAL and SINGER), A., ii, 34.
 detection of (POLONOVSKI), A., ii, 601.
 detection of, in presence of formic and tartaric acids (KRAUSS and TAMPRE), A., ii, 466.
 estimation of (ABELMANN), A., ii, 419.
 estimation of, in urine and faeces (BAU), A., ii, 356.
- Oxaluric acid**, estimation of, in urine and faeces (BAU), A., ii, 356.
- Oxalyl chloride** (STAUDINGER, SCHLENKER, and GOLDSTEIN), A., i, 432, 433.
- Oxamic acid**, ethyl ester, hydrolysis of (SKRABAL and GRETE), A., ii, 681.
- Oxamide**, oxidation of (FOSSE), A., i, 165.
- Oxazines**, synthesis of (FAIRCLOUX and Toms), T., 2076.
 of the naphthalene series, synthesis of (LUPWIG-SEMLIC), A., i, 448, 686.
- Oxidation**, mechanism of (WIELAND), A., i, 889.
 pressure limits of (JØRISSEN), A., ii, 99.
 in the organism (SPIRO), A., i, 629.
 effect of salts on (BING), A., i, 286.
- Oxides**, solid, molecular volumes of (BALAREFF), A., ii, 575.
 $\alpha\beta$ -Oxido- $\gamma\gamma$ -diphenyl- Δ^8 -butenoic acid, and α -bromo-, ethyl esters (STAUDINGER and REBER), A., i, 246.
- Oxime** $C_8H_{10}ON$, from oxidation of diamylene (SCHINDELMEISER), A., i, 491.
- Oximes**, isomerism of (ATAK), T., 1175; (ATAK and WHINYATES), T., 1154.
- Oximinoaceto-5-chloro-o-aniside** (MARTINET and COISSET), A., i, 516.
- N-Oximino ethers**, formation of (BARROW and GRIFFITHS), T., 212.
- Oxindoles** N-substituted, preparation of (STOLLE), A., i, 596.
- Oxindole-6-sulphonic acid**, and its oxime and sodium salt, and amino- (MARTINET and DORNIER), A., i, 516.
- Oxomalonic acid**, ethyl ester, carbozones and hydrazones of (STAUDINGER and HAMMET), A., i, 325.
- Oxonie acid**, transformations of (BLITZ and ROHL), A., i, 891.

- 6-Oxy-4-aldehyde-2-phenylpyrimidine**, and its oxime (JOHNSON and MIKESKA), A., i, 57.
- Oxycellulose**, differentiation of, from hydrocellulose (SCHWALBE and BECKER), A., i, 308.
- Oxydases** in plants (FERNÁNDEZ; ONSLOW), A., i, 485.
- Oxydihydrocycampholenic acid** (PERKIN and TITLEY), T., 1103.
- Oxydisilin** (KAUTSKY), A., ii, 505.
- Oxygen**, absorption spectrum of (DUCLAUX and JEANTET), A., ii, 613.
- quadrupolar moment for (KEESOM), A., ii, 327.
- number of molecules in a given volume of (STĂTESCU), A., ii, 399.
- density of (MOLES and GONZALEZ), A., ii, 546.
- inflammation point of mixtures of hydrogen and (FIZSEL), A., i, 317.
- Oxygen estimation**:—
- estimation of, dissolved in water (VAXOSI), A., ii, 517.
- Oxyhaemocyanin**, reduction of (DHÉRE and SCHNEIDER), A., i, 366.
- Oxyhaemoglobin**, preparation and recrystallisation of (DUDLEY and EVANS), A., i, 749.
- ultra-violet spectrum of (DHÉRE), A., i, 625.
- action of cyanogen derivatives on (VLES), A., i, 281.
- relation of, to carbon dioxide in blood (CAMPBELL and POULTON), A., i, 141.
- 8-Oxy-1-methoxy-7-(2')-indoxylacenaphthene** (STAUDINGER, GOLDSTEIN, and SCHLENNER), A., i, 434.
- 8-Oxy-1-methoxy-7-(2')-oxythionaphthenylacenaphthene** (STAUDINGER, GOLDSTEIN, and SCHLENNER), A., i, 434.
- 7-Oxy-1:2-naphthaquinone-1-oxime**, 7-pentammino-1:7-dicobaltic salt (MORGAN and SMITH), T., 709.
- 8-Oxy-1:2-naphthaquinone-2-oxime-3:6-disulphonic acid**, pentamminocobaltic salts (MORGAN and SMITH), T., 713.
- 6-Oxy-2-phenyl-4-aminomethylpyrimidine**, and its hydrochloride (JOHNSON and MIKESKA), A., i, 57.
- 6-Oxy-2-phenyl-4-diethoxymethylpyrimidine** (JOHNSON and MIKESKA), A., i, 57.
- 3-Oxy(1)thionaphthen**, derivatives of (SMILES and McCLELLAND), T., 1810.
- 3-Oxy(1)thionaphthen**, 4-chloro-, and its derivatives (v. AUWERS and THIES), A., i, 121.
- 2-(or 4)-Oxy-4-violone** (DILTHEY and BURGER), A., i, 430.
- Ozone**, decomposition of, by light (GRIFFITH and SHUTT), T., 1948.
- Ozone**, action of, on alkali and alkaline earth metals (STRECKER and THIENEMANN), A., ii, 44.
- P.**
- Paeonol**, 3-amino-, and its diacetyl derivative (SONN), A., i, 279.
- Palladium**, adsorption of hydrogen by (FIRTH), T., 1120.
- relation between the occlusion of hydrogen by, and its catalytic activity (MAXTED), T., 1280.
- sol., effect of temperature on the catalytic power of (ROCASOLANO), A., ii, 321.
- Palladium alloys** with copper, activity of (NOWACK), A., ii, 208.
- with gold, use of, for crucibles (WASHINGTON), A., ii, 194.
- with hydrogen, conductivity of (SMITH), A., ii, 423.
- with silver, activity of (NOWACK), A., ii, 208.
- Palmierite**, from Vesuvius (ZAMBONINI), A., ii, 458.
- Palmitic acid**, structure and properties of thin films of, on water (ADAM), A., ii, 488.
- benzyl ester (SHONLE and ROW), A., i, 341.
- α-glucose, raffinose, and sucrose esters (HESS, MESSNER, and KLETZL), A., i, 306.
- sodium salt, adsorption by (LAING), T., 1669.
- iso*Palmitic acid, and its methyl ester (KAWASE, SUDA, and FUKUZAWA), A., i, 700.
- Panax-sapogenol**, and its derivatives (KONDO and AMANO), A., i, 296.
- Panax-saponin** (KONDO and AMANO), A., i, 296.
- Pancreas**, nucleic acid from the (HAMMARSTEN), A., i, 200.
- Papaver somniferum*, alkaloids and latex in (ANNETT), A., i, 87.
- iso*Papaverinecarboxylic acid, ethyl ester (GADAMER and KNOCH), A., i, 580.
- Papilionaceae**, hydrogen sulphide from seeds of (MIRANDE), A., i, 486, 759.
- Paraonic acid**, preparation of (INGOLD), T., 322.
- Paraffin**, oxidation products of (SCHAAR-SCHMIDT and THIELE), A., i, 1.
- Paraffins**, rate of solidification of (FRICKE), A., ii, 659.
- oxidation of (GRÄNACHER), A., i, 2.
- Paraffins**, nitro-, rearrangement of (BAMBERGER), A., i, 218.
- Paraffin wax**, oxidation of (GRÜN and WIRTH), A., i, 3.

- Paraglobulin**, gold number and sensitizing action of (REITSTÖTTER), A., ii, 176.
- Particles**, angle of slope of (LANGHANS), A., ii, 39.
- α -Particles**, disintegration of atoms by (RUTHERFORD and CHADWICK), A., ii, 293, 671.
- Partition**, phenomenon of (DE KOLOSOWSKY), A., ii, 440.
- Partition coefficients** (SMITH), A., ii, 315.
- Passivity** (DE BRUYN), A., ii, 153, and photoelectric sensitiveness of metals (FRESK), A., ii, 569.
- Paternoite** (MILLOSEVICH), A., ii, 54.
- Peanuts**, proteins extracted from (DOWELL and MENAUL), A., i, 644.
- Peanut oil**, constituents of (JAMIESON, BAUGHMAN, and BRAUNS), A., i, 840.
- Peat**, separation of the amide nitrogen of (MILLER and ROBINSON), A., ii, 718.
- Pecans**, proteins extracted from (DOWELL and MENAUL), A., i, 644.
- Pectin**, action of alkalis and pectase on (TUTIN), A., i, 751.
- Pelvetia Wrightii***, constituents of (KONDÓ), A., i, 387.
- Penicillium***, effect of selenium on the development of (NEMEC and KÁŠ), A., i, 294.
- Penicillium glaucum***, enzyme formation by (v. EULER), A., i, 482.
- Pentabutyryl β -D-glucose** (HESS, MESSEMER, and KLETZL), A., i, 306.
- 3:4:2':4':6'-Pentamethoxy- α -diphenylpropan-8-one, ω -hydroxy-** (NIERENSTEIN), T., 165.
- Pentane**, β -amino-, and its phenylcarbamide (MAILHE), A., i, 314.
- Pentane lamp**. See Lamp.
- cyclopentane-1-acetic-1-carboxylic acid*** (NORRIS and THORPE), T., 1208.
- cyclopentanespiro-4-bromocyclohexane-3:5-dione*** (NORRIS and THORPE), T., 1210.
- cyclopentanespiro-4:4'-dibromocyclohexane-3:5-dione*** (NORRIS and THORPE), T., 1210.
- cyclopentane-1:1-diacetic acid*** (NORRIS and THORPE), T., 1208.
- dl-trans-cyclopentane-1:3-dicarboxylic acid***, resolution of (PERKIN and SCARBOROUGH), T., 1400.
- cis-cyclopentane-1:3-dicarboxylic acid***, 1:3-dibromo-, and its methyl ester (PERKIN and SCARBOROUGH), T., 1407.
- cyclopentanespiro-3:5-diketeto-4-dithiocyclohexane*** (NAIK), T., 1240.
- cyclopentanespirocyclohexane-3:5-dione***, and its anilide (NORRIS and THORPE), T., 1207.
- cyclopentanespirocyclohexane-3:5-dione-2-carboxylic acid***, ethyl ester (NORRIS and THORPE), T., 1207.
- cyclopentane-1:2:2:3-tetracarboxylic acid***, ethyl ester (PERKIN and ROBINSON), T., 1397.
- cis-* and *trans-cyclopentane-1:2:3-tricarboxylic acids***, synthesis and resolution of (PERKIN and ROBINSON), T., 1392.
- cyclopentanone-3-carboxylic acid***, and its ethyl ester (INGOLD and THORPE), T., 500.
- cyclopentanone-2:4-dicarboxylic acid***, ethyl ester, and its semicarbazone (INGOLD and THORPE), T., 499.
- cyclopentanone-3:4-dicarboxylic acid***, and its derivatives (INGOLD), T., 349.
- Pentapropionyl β -D-glucose** (HESS, MESSEMER, and KLETZL), A., i, 306.
- δ -Pentatriacontanol** (SCHICHT), A., i, 155.
- Penta β -valeryl β -D-glucose** (HESS, MESSEMER, and KLETZL), A., i, 306.
- cyclopentenylacetone***, and its semicarbazone (KON), T., 823.
- Pentosans**, estimation of (LING and NANJ), A., ii, 601.
- Pentoses**, estimation of (LING and NANJ), A., ii, 601; (SPOHR), A., ii, 714.
- cyclopentylacetone***, and its semicarbazone (KON), T., 824.
- Pepsin**, action of (HAMMARSTEN), A., i, 138, hydrolysis of gelatin by (NORTHROP), A., i, 823, digestion of proteins by (NORTHROP), A., i, 137, estimation of the proteolytic activity of (BREWSTER), A., ii, 419.
- Peptides**, amphoteric properties of (ECKWEILER, NOYES, and FALK), A., i, 316.
- Peptones**, detection of, in urine (FITTIPALDI), A., ii, 419.
- Perchlorates and Perchloric acid**. See under Chlorine.
- Perhydro- α -benzylbenzoic acid**, and its salts (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 668.
- Perhydro- α -naphthylmethylenbenzoic acids**, and their salts (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 668.
- Perhydrophenyl β -naphthylmethane- α -carboxylic acids**, isomeric, preparation of (WILLSTÄTTER), A., i, 177.
- Perilla oil**, constituents of (NISHIZAWA), A., i, 258.
- Periodic system of the elements** (NORDEN), A., ii, 38; (ODDO), A., ii, 102; (PARTINGTON), A., ii, 103.

- Periodic system**, modification of (MARGARY), A., ii, 543.
- atomic structure**, and radioactivity (URBACH), A., ii, 251.
- in relation to radioactive degradation (KIRCHHOF), A., ii, 103.
- Permanganates**. See under Manganese.
- Permutites**, dissociation and equilibria of basic exchange in (GÜNTHER-SCHULZE), A., ii, 9, 496, 624, 642; (HISCHMÖLLER), A., ii, 495.
- Peroxydases** (WILLSTÄTTER), A., i, 138.
- in plants (FERNÁNDEZ), A., i, 485.
- Persulphates**. See under Sulphur.
- Pertithiocarbonates**. See under Thio-carbonic acid.
- Petrol**, preparation of, from linseed oil (MAILHE), A., i, 706.
- preparation of, from rape oil (MAILHE), A., i, 841.
- Petroleum**, theory of formation of (STEINKOFF, WINTERNITZ, ROEDERER, and WOLYNSKI), A., i, 24.
- formation of, from fish oils (KOBAYASHI), A., i, 297.
- light, analysis of (CHERCHIEFFSKY), A., ii, 280; (CHAVANNE and SIMON), A., ii, 354.
- products, estimation of sulphur and chlorine in (BOWMAN), A., ii, 706.
- Phagocytosis** by solid particles (FENN), A., i, 640.
- action of alkali salts on (RADSMAN), A., i, 204.
- Phaseolus aureus* (mung bean), proteins from (JOHNS and WATERMAN), A., i, 84.
- Phaseolus lunatus*, hydrocyanic acid in the beans of (LÜHRIG), A., i, 387.
- Phase rule** (LE CHATELIER), A., ii, 31.
- Phenacyl** sulphide, hydrazones and semicarbazones (FROMM and EHRHARDT), A., i, 275.
- butyl sulphide, and its mercurioidide (WHITNER and REID), A., i, 301.
- 9-Phenacylfluorene**, 2:7-di-bromo- (SIEGLITZ), A., i, 111.
- Phenacylphenyl- α -naphthylmethylarsonium** bromide (BURROWS and TURNER), T., 434.
- Phenacylsulphone**, hydrazones and semicarbazones (FROMM and EHRHARDT), A., i, 276.
- NV-Phenacylsulphone-1:5-diamino-biuret** (FROMM and EHRHARDT), A., i, 275.
- 1-Phenacyltheobromine**, and 3:4-dihydroxy-, and their derivatives (MANNICH and KROLL), A., i, 885.
- 7-Phenacyltheophylline**, and its derivatives and 3:4-dihydroxy- (MANNICH and KROLL), A., i, 885.
- Phenanthranaphthazine-13-sulphonic acid**, diamino- and dinitro-hydroxy- (WATSON and DUTT), T., 1218.
- Phenanthraphenazine**, amino-derivatives (WATSON and DUTT), T., 1215.
- Phenanthraphenazine-2:7-bis-(2')-azo-7'-amino-1'-hydroxynaphthalene-3'-sulphonic acid**, 11-amino- (WATSON and DUTT), T., 1220.
- Phenanthraquinone** colouring matters (WATSON and DUTT), T., 1211.
- Phenanthraquinonebis-(2')-azo-7'-amino-1'-hydroxynaphthalene-3'-sulphonic acids** (WATSON and DUTT), T., 1219.
- Phenanthraquinonediphenylhydrazone-*pp*-disulphonic acid**, 2:7-diamino- (WATSON and DUTT), T., 1221.
- Phenanthraquinoneimide**, and its anhydride, and their salts and derivatives (SCHÖNBERG and ROSENTHAL), A., i, 809.
- 1:2-(9'-10')Phenanthrazinocanthraquinone**, 4-amino- (TERRES), A., i, 677.
- Phenanthrene**, bromo-derivatives of (HENSTOCK), T., 55.
- Phenanthrenequinobenzophenoneketazine** (GERHARDT), A., i, 747.
- Phenanthrenequinofluorenoneketazine** (GERHARDT), A., i, 747.
- 9(10)-Phenanthridone**, preparation of (OYSTER and ADKINS), A., i, 270.
- Phenanthrone**, 2(7):10-di-bromo-, and its oxime (HENSTOCK), T., 58.
- Phenarsazine**, and its derivatives, and amino-, and *mono*- and *di*-nitro- (WIELAND and RHEINHEIMER), A., i, 373.
- Phenarsazinic acid**, and amino-, and nitro- (WIELAND and RHEINHEIMER), A., i, 373.
- Phenazoxine**, 4-nitro-, and its acetyl derivative (KEHRMANN and RAMM), A., i, 128.
- Phenetole**, *p*-nitro-, velocity of hydrolysis of (BLOM), A., ii, 497.
- o*- and *p*-nitro-, preparation of, from chloronitrobenzene (BLOM), A., i, 413.
- p*-Phenetylcaramide (dulcin)**, sweetening power of (PAUL), A., i, 109.
- Phenetylenedimercaptidacetate** (DIMROTH), A., i, 697.
- Phenherpamethylene**. See Benzosuberene.
- Phenol**, miscibility of, with mineral solutions (DUBRISAY), A., ii, 282.
- hydrogenation of (VAVON and DERNIE), A., i, 505.
- nitration of (RICE), A., i, 102.

- Phenol**, condensation of 4-methylbenzophenone chloride with (HAHN), A., i, 243.
 action of tin with (ZOLLER), A., i, 238.
 chemical potential and toxicity of solutions of (LAIRD), A., i, 151.
 toxicity of, towards yeast (FULMER; FRASER), A., i, 223.
 detection of (RODILLON), A., ii, 282.
 estimation of (EMERY), A., ii, 603.
- Phenol**, *m*-amino-, equilibria of amines with (KREMANN and HOHL), A., i, 682.
p-amino-, and its alkyl ethers, derivatives of (KOLSHORN), A., i, 413.
o-aminothio-, action of, on *o*-quinones (STAHRFOSS), A., i, 457, 794.
 tribromo-, bromide, action of mercury on (HUNTER and WOOLLETT), A., i, 238.
 trichloro-, silver salt, action of iodine on (HUNTER and SEYFRIED), A., i, 239.
tri- and *tetra*-chloro-derivatives, and their benzoates (HOLLEMAN, VAN DER HORVEN, and VAN HAEFTEN), A., i, 102.
o-nitro-, condensation of formaldehyde with (FISHMAN), A., i, 23.
 2,4-dinitro-, equilibrium of, with phenylenediamines (KREMANN and ZAWODSKY), A., i, 601.
*tri*nitro-. See Picric acid.
- Phenols**, tautomerism of (FICHS), A., i, 241.
 equilibria of diphenylmethane with (KREMANN and FRITSCH), A., i, 662.
 complex mercury compounds of (PAOLINI), A., i, 902.
 compounds of hexamethylenetetramine with (HARVEY and BAEKELAND), A., i, 239.
 and their ethers, action of nitric acid on (MEYER and ELLERS), A., i, 240.
 silver salts, catalytic decomposition of (HUNTER and WOOLLETT), A., i, 238; (HUNTER and SEYFRIED), A., i, 239.
 estimation of, in etheral oils (VAN URK), A., ii, 660.
- Phenols**, amino-, equilibrium of, with phenols or nitro-compounds (KREMANN, LUPFER, and ZAWODSKY), A., i, 561.
o-amino-, oxidation of (V. AUWERS, BORSCHKE, and WELLER), A., i, 571.
 nitro-, metallic derivatives of (GODDARD), T., 1181; (D. and A. E. GODDARD), T., 2044.
mono- and *di*-nitro-, influence of position on the solubility and volatility of (SIDGWICK and ALDORF), T., 1001.
- Phenols**, thio- (BRAND and STALLMANN), A., i, 664.
Phenol/bromocoumarin (KRISHNA), T., 1424.
Phenolcarboxylic acids, distinction of, by their conductivity with boric acid (BÖSEKEN and OUWERHAND), A., i, 861.
Phenolcitraconcin, and its derivatives (KRISHNA and POPE), T., 239.
Phenolcoumarin, and its salts and derivatives and tetrabromo- (KRISHNA), T., 1420.
Phenolic substances, estimation of, in urine (TISDALL), A., ii, 67.
Phenolphthalein, preparation of (WARD), T., 850.
 constitution of, and *di*chloro- (COSSENSO and APOSTOLO), A., i, 346.
Phenolphthalein, bromo-derivatives, colour and constitution of (MOTIL), A., i, 365.
*tetra*chloro-, and its diacetate (WHITING), A., i, 31.
Phenol-*o*-sulphonic acid, 6-amino- (KING), T., 1117, 1417.
 4:6-diamino-, nitroamino-, and 6-nitro-, and its salts (KING), T., 1417.
Phenolsulphonic acids, preparation of picric acid from (KING), T., 2705.
6-Phenoxarsine, and its oxide and sulphide, and 6-bromo-, 6-iodo-, and 6-thiocyano- (LEWIS, LOWRY, and BERGEM), A., i, 471.
Phenoxarsinic acid, and its sodium salt (LEWIS, LOWRY, and BERGEM), A., i, 472.
Phenoxazine, absorption spectra of nitro-derivatives of (KEHRMANN and GOLDSTEIN), A., i, 271.
Phenoxide, sodium, fusion of (HOFMANN and HEYN), A., i, 506.
Phenoxide, tribromo-, and *tri*ole-, potassium (HUNTER and WOOLLETT), A., i, 238.
 nitro-, barium, calcium, and strontium (GODDARD), T., 1162.
Phenoxides, metallic, and their thermal decomposition (FISCHER and EHRHARDT), A., i, 412; (DURAND), A., i, 492.
Phenoxycacodyl (LEWIS, LOWRY, and BERGEM), A., i, 472.
***S* Phenoxycinnamic** acid, *o*- and *p*-chloro-, and their ethyl esters (RHEIMANN), A., i, 430.
***o*-Phenoxy- γ -ethoxyisopropylurethane** (PUYAL and MONTAGNE), A., i, 108.
Phenoxethyl alcohol, *tri*-*o*-chloro-*o*-*p*-aminocacetyl derivative (HINSBERG), A., i, 341.

- Phenoxyfumaric acid, *o*- and *p*-chloro-, and their ethyl esters (RUHEMANN), A., i, 430.
- 4-Phenoxyisophthalic acid, 6-bromo- (ECKERT and SEIDEL), A., i, 863.
- α -Phenoxystyrene, *o*-chloro- (RUHEMANN), A., i, 430.
- 4-Phenoxy-*m*-toluic acid, 6-bromo- (ECKERT and SEIDEL), A., i, 863.
- Phenyl allyl ether, *o*-amino-, and its derivatives (v. BRAUN and BRAUNSDORF), A., i, 437.
- p*-amino-, acyl derivatives (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 339.
- isamyl sulphide (ADAMS, BRAMLET, and FENDICK), A., i, 5.
- β -bromoethyl, β -chloroethyl, and β -hydroxyethyl sulphides and sulphoxides, 2:4-dinitro- (BENNETT and WHINCOP), T., 1864.
- 87-dibromopropyl ether, 2:4-dinitro- (FAIRBOURNE and TOMS), T., 1033.
- carbonate, nitration of (HOEFLAKE), A., ii, 540.
- β -hydroxyethyl ether, 2:4-dinitro- (FAIRBOURNE and TOMS), T., 2077.
- iododichloride, reaction of aniline with (PIERONI), A., i, 338.
- methyl sulphide, *o*-bromo- (BRAND and STRALLMANN), A., i, 665.
- Phenylacetaldehyde, nitro-, metabolism of. See Metabolism.
- Phenylacetamide, *p*-nitro-, preparation of (GUPTA), T., 302.
- Phenylacetic acid, mercury derivatives (WHITMORE and MIDDLETON), A., i, 378.
- Phenylacetic acid, amino-, resolution of, and its derivatives (MINOVICI), A., i, 244.
- Phenylacetic-*p*-arsinic acid (ROBERTSON and STIEGLITZ), A., i, 281.
- α -Phenylacetoacetaldehyde (WEITZ and SCHEFFER), A., i, 869.
- Phenylacetophenone (*acetyl*diphenyl), derivatives of (DILTHEY, BAURIEDL, GEISELBRECHT, SEEGER, and WINKLER), A., i, 189.
- Phenylacetylenecarbamic acid, barium salt (RINKES), A., i, 27.
- 5-Phenylacridine, picrates of (BASSETT and SIMMONS), T., 416.
- Phenylalanine, 3:4-dihydroxy- (HIRAI), A., i, 248; (SEGUR), A., i, 316.
- from the velvet bean (MILLER), A., i, 84.
- 2-Phenylalanine, 3:4-dihydroxy-, hydrochloride (WASER and LEWANDOWSKI), A., i, 788.
- Phenylalanine series (WASER and LEWANDOWSKI), A., i, 788.
- Phenylalanine-choline, preparation of, and its salts (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 228.
- Phenylalaninol, and its hydrochloride (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 230.
- Phenylalaninol-choline chloride and iodide (P. and W. KARRER, THOMANN, HORLACHER, and MÄDER), A., i, 230.
- d*-Phenylaminoacetic acid, ethyl ester derivatives of (MARVEL and NOYES), A., i, 15.
- Phenylaminoacetic acid, *p*-amino-, hydrochlorides of (GRANT and PYMAN), T., 1901.
- Phenylaminoacetoneitrile, *p*-hydroxy-, and its acetyl derivative (GALATIS), A., i, 556.
- Phenylaminobenzaldehyde, *m*-2:4-dinitro- (MAYER and BANSAL), A., i, 176.
- Phenylaminocamphor, and *p*-amino-, and dinitro-, and their derivatives (FORSTER and SAVILLE), T., 791.
- Phenylaminocaramidonine (BADISCHE ANILIN- & SODA-FABRIK), A., i, 361.
- Phenylaminodiacetic acid, *p*-hydroxy-, and its salts and derivatives (GALATIS), A., i, 556.
- 9-Phenylamino-9:10-dihydroanthracene, and *o*-, *m*-, and *p*-nitro- (BARNETT and COOK), T., 909.
- Phenylisomylcarbinol (REICH, VAN WICK, and WAELLE), A., i, 333.
- 1-Phenyl-3-*p*-anisyl-5-methylpyrazoline (v. AUWERS and LÄMMERHIRT), A., i, 464.
- Phenyl-4-arsenic disulphide, amino-, thiolacetyl derivative (BINZ and HOLZAPFEL), A., i, 31.
- Phenylarsine, *o*-amino-, *o*-bromo-, *o*-hydroxy-, and *o*-nitro-, derivatives of (KALB), A., i, 375.
- Phenylarsinic acid, *mono*- and *di*-aminohydroxy-, acetyl derivatives (RAIZISS and GAYRON), A., i, 379.
- o*-bromo- (KALB), A., i, 377.
- 5-iodo-3-nitro-4-hydroxy- (STIEGLITZ, KHARASCH, and HANKE), A., i, 524.
- Phenylarsinophenyl-*o*-arsinic acid (KALB), A., i, 376.
- Phenylarsinophenyl-*o*-arsinic acid, amino- and *m*-nitro- (WIELAND and RHEINHEIMER), A., i, 374.
- Phenylazide, action of phenol, ethyl, and methyl alcohols, respectively, on (HAMBERGER), A., i, 717.

- Phenylazide**, *p*-bromo- and *p*-chloro-, reactions of, with dilute hydrochloric and sulphuric acids (BAMBERGER), A., i, 719.
- Phenylbenzhydrylamine**, additive compounds of phenyliminobenzophenone with (ALESSANDRI), A., i, 570.
- Phenyl-*o*'-benzhydrylphenylamines**, di-nitro- (KEHRMANN, RAMM, and SCHMAJEWSKI), A., i, 600.
- 1-Phenylbenzoxazole**, 4-hydroxy- (HENRICH and ROEDEL), A., i, 888.
- 6-hydroxy-** (HENRICH and WUNDER), A., i, 889.
- 2-Phenyl-1:2:3-benzotriazole**, diamino- and aminonitro- (SCHMIDT and HAGENBUCKER), A., i, 898.
- 2-Phenyl-1:2:3-benzotriazole-5-azo- β -naphthylamine** (SCHMIDT and HAGENBUCKER), A., i, 898.
- Phenylbenzylallylazonium iodide**, compound of thiocarbamide with (SINGH and LAL), T., 211.
- Phenylbenzylbutyrolactonecarboxylamide** (GAULT and WEICK), A., i, 674.
- Phenylbenzylhydantoin** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- 1-Phenyl-3-benzylideneindene** (MAYER, SIEGLITZ, and LUDWIG), A., i, 555.
- Phenylbenzylmalononitrile** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- Phenylbenzylmethylazonium iodide**, compound of thiocarbamide with (SINGH and LAL), T., 211.
- Phenylbenzylpropylazonium iodide**, compound of thiocarbamide with (SINGH and LAL), T., 211.
- dl*-Phenylbromoacetic acid**, *l*-menthyl ester, preparation of (SHIMOMURA and COHEN), T., 1820.
- β -Phenylbromoacrylic acid**, *o*-nitro-, ethyl ester (RUGGOLI and BOLLIGER), A., i, 812.
- Phenyl-*l*-bromobismuthine**, preparation of (CHALLENGER and ALLPRESS), T., 919.
- Phenylbromonitromethane** (WIELAND, BLUMICH, and REINDEL), A., i, 553.
- γ -Phenyl-*n*-butaldehyde**, γ -hydroxy-, and its semi-acetal (HELFFERICH and LECHER), A., i, 421.
- Phenylbutylcarbinylurethane** (PUYAL and MONTAGNE), A., i, 108.
- δ -Phenylbutyl methyl ketone** semicarbazone (BORSCHKE and ROTH), A., i, 862.
- Phenylbutyric acid**, α -amino- α -chloro-, and its nitrile (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- Phenylbutyric acid**, γ -hydroxy-, sodium salts, rotation of (THIERFELDER and SCHEMPF), A., i, 511.
- Phenylbutyrolactonecarboxylic acid**, ethyl ester, and its salts (GAULT and WEICK), A., i, 674.
- N*-Phenylcamphorimide**, oxime of, and its benzoyl derivative (FORSTER and SAVILLE), T., 792.
- Phenylcarbamide**, *p*-bromo-, and *m*-nitro- (DAINS and WERTHEIM), A., i, 61.
- α -Phenylcarbamido- β -2-furylpropionic acid** (SASAKI), A., i, 808.
- γ -Phenylcarbonyl- γ -bisdisulphidoacetic acid**, ethyl ester (NAIK), T., 1241.
- Phenylcarbinol**. See Benzyl alcohol.
- dl*-Phenylchloroacetic acid**, *l*-menthyl ester, preparation of (SHIMOMURA and COHEN), T., 1818.
- Phenylchloroaceto- α -bornylamide** (SHIMOMURA and COHEN), T., 1823.
- Phenylchloroaceto-*l*-menthylamide** (SHIMOMURA and COHEN), T., 1823.
- dl*-Phenylchloroacetyl-*l*-tyrosine**, preparation of, and its ethyl ester (SHIMOMURA and COHEN), T., 1824.
- Phenylchloroarsinophenyl-*o*-arsine di-chloride** (KALB), A., i, 376.
- Phenyl- α -chlorobenzylidenecamine**, α -hydroxy- (MAYER and BANSA), A., i, 176.
- 2-Phenyl-5-chloromethylhexazolidine**, and its nitrobenzoyl derivative (BERGMANN, RADT, and BRAND), A., i, 688.
- β -Phenylchroman**, 2:4:6:3':4'-penta-hydroxy- (NIEHENSTEIN), T., 162.
- β -Phenyl- α -di-*p*-anisylethane- α β -diol** (OREKHOFF and TIFFENEAU), A., i, 566.
- Phenyl-di-*p*-anisylmethyl ketone**, and its oxime (OREKHOFF and TIFFENEAU), A., i, 566.
- Phenyl-di-*p*-anisylpyridines**, and their salts (DILTHEY and others), A., i, 736.
- Phenyl-diazoacetic acid**, ethyl ester (MARVEL and NOYES), A., i, 15.
- 4-Phenyl-2:6-di-*p*-chlorophenylpyridine**, and its salts (DILTHEY and others), A., i, 736.
- 4-Phenyl-2:6-di-*p*-chlorophenylpyrrol ferriochloride** (DILTHEY, BAUKIEL, GEISELRECHT, SEEGER, and WINKLER), A., i, 189.
- 5-Phenyl-3:5-diethylhydantoin** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618.
- α -Phenyldiguanide**, salts of (PELLIZZARI), A., i, 622.
- 5-Phenyldihydrophenazine**, 1-nitro-, and 3-nitro-1-amino- (KEHRMANN and EFFRONI), A., i, 602.

- Phenyldi- α -hydroxybenzylarsine (ADAMS and PALMER), A., i, 70.
- Phenyldi- α -hydroxy-*n*-butylarsines (ADAMS and PALMER), A., i, 70.
- Phenyldi-*p*-hydroxyphenylpyridines, and their salts and derivatives (DILTHEY and others), A., i, 738.
- 6-Phenyl-2,4-di-*p*-hydroxyphenylpyrylium chloride (DILTHEY and BURGER), A., i, 429.
- Phenyldi-*p*-hydroxyphenyl-*p*-tolylmethane (HAHN), A., i, 244.
- β -Phenyl- β -3,4-dimethoxyphenylpropionic acid, and its silver salt (BAILLON), A., i, 250.
- β -Phenyl- β -3,4-dimethoxyphenylisoscucinic acid, and its metallic salts (BAILLON), A., i, 250.
- β -Phenyl- β -*p*-dimethylaminophenylisoscucinic acid, and its silver salt (BAILLON), A., i, 250.
- Phenyldimethylarsine, compounds of, with phosphorus and arsenic iodides and metallic iodides (BURROWS and TURNER), T., 1449.
- α -Phenyl- β -8-dimethylbutan- α -ol, dehydration of (AFOLIT), A., i, 564.
- Phenyldimethylethylarsonium salts (BURROWS and TURNER), T., 1450.
- 1-Phenyl-3:5-dimethylpyrazole, 1-*p*-nitro- (MORGAN and DREW), T., 621.
- 1-Phenyl-2:3-dimethyl-5-pyrazolone. See Antipyrine.
- 4-Phenyl-2:6-dimethylquinoline (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 56.
- Phenyldimethylsulphonium salts, α -nitro- (BRAND and STALLMANN), A., i, 564.
- Phenyldiphenylene-ethylene, chloro-, and its sulphide derivatives (STAUDINGER, SIEGWART, ANTHER, BOMMER, and GERHARDT), A., i, 44.
- 4-Phenyl-2:6-di-*p*-tolylpyridine and its salts (DILTHEY and others), A., i, 736.
- 4-Phenyl-2:6-di-*p*-tolylpyryl ferrichloride (DILTHEY, BAURFELD, GEISEL-BRECHT, SEEGER, and WINKLER), A., i, 188.
- α -Phenyleneaminoisammeline, and its hydrochloride (PELLIZZARI), A., i, 622.
- α -Phenyleneaminodiguanide (PELLIZZARI), A., i, 622.
- α -Phenyleneaminoisomelamine (PELLIZZARI), A., i, 622.
- α -Phenylenediaminomethylenesulphoxylic acid (BINZ and HOLZAPFEL), A., i, 31.
- α -Phenyleneisammeline, and its salts (PELLIZZARI), A., i, 622.
- m*-Phenylenediamine, 6-chloro-2:4-dinitro- (HÜFFER), A., i, 540.
- m*-Phenylenediamine, 5-nitro-, and its derivatives (KORCZYNSKI and PIASECKI), A., i, 518.
- Phenylenediamines, equilibrium of, with 2:4-dinitrophenol (KREMANN and ZAWODSEY), A., i, 601.
- m*-Phenylenediamines, symmetrical alkylated, manufacture of (BRITISH DYESTUFFS CORPORATION, LTD., GREEN, and BRITAIN), A., i, 805.
- α -Phenylenediamine oxychloride (KALB), A., i, 377.
- α -Phenylenediamine acid (KALB), A., i, 377.
- m*-Phenylenediamine acid, and its sodium salt (LIEB), A., i, 697.
- p*-Phenylenediamine acid, and its sodium salt (LIEB), A., i, 698.
- α -Phenylenedi-1:2-naphthimazole, and its derivatives (LIEB and SCHWARZER), A., i, 691.
- α -Phenyleneguanidine, dicyano-, synthesis of (PELLIZZARI), A., i, 363.
- α -Phenyleneisomelamine (PELLIZZARI), A., i, 621.
- Phenylethoxymethyloxazolidine (BERGMANN, RADE, and BRAND), A., i, 689.
- β -Phenylethylaminodi(4-methyl-3-methylglyoxaline, and its pierate (GERNGROSS), A., i, 454.
- 4(5)-Phenylethylaminoethylglyoxaline, *p*-hydroxy-, and its salts (GERNGROSS), A., i, 454.
- 5-Phenylethylaminomethyl-4-methylglyoxaline, and its salts (GERNGROSS), A., i, 454.
- Phenylethylbarbituric acid, compounds of morphine alkaloids with (SOCIETY OF CHEMICAL INDUSTRY IN BASEL), A., i, 354.
- Phenylethylcarbinylurethane (PUYAL and MONTAGNE), A., i, 108.
- Phenylethylene, α , β -dinitro- (WIELAND and BLEICH), A., i, 554.
- Phenylethylhydantoins (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618, 619.
- 5-Phenyl-5-ethylhydantoin, 5-*p*-chloro- (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618.
- Phenylethylidene dibutyl sulphide, and its mercuriodide (WHITNER and REID), A., i, 301.
- Phenylethylidenebisphenylacetamide (GUPTA), T., 302.
- Phenylethylmalononitrile (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- Phenylethylpropylcarbinol. See γ -Phenylhexan- γ -ol.
- Phenylethyltrimethylammonium hydroxide, and its aurichloride (ACKERMANN and KUTSCHER), A., i, 499.

- β*-Phenylethylurethane, *αβ*-dihydroxy-, and its derivatives** (RINKES), A., i, 28.
- Phenylfuroxan** (WIELAND), A., i, 606.
- Phenylfurylcamphorylmethane** (WOLFF), A., i, 514.
- Phenylglyceric acid**, action of fused potassium hydroxide on (LE SUEUR and WOOD), T., 1697.
- Phenylglycine, *p*-hydroxy-, derivatives of** (GALATIS), A., i, 556.
- Phenylglycine-*o*-carboxylic acid**, fusion of, with alkalis (PHILLIPS), A., i, 811.
- 4-Phenylglyoxaline**, and amino-, nitro- and thiol-derivatives, and their salts and derivatives (GRANT and PYMAN), T., 1893.
- 2-Phenylglyoxaline-4:5-dicarboxylic acid, 2-*m*-amino-, and 2-*m*-nitro-** (FARGHER), T., 163.
- Phenylglyoxalphenylhydrazone**, preparation, tautomerism, and solubility of (SIDGWICK and EWBANK), T., 437.
- Phenylglyoxyphenylalanine**, and its semicarbazone (BOUGAULT), A., i, 178.
- γ*-Phenylhexan-*γ*-ol** (YERAMIEN), A., i, 727.
- γ*-Phenyl-*Δγ*-hexene** (YERAMIEN), A., i, 727.
- Phenylcyclohexylbenzamide** (FOUQUE), A., i, 556.
- Phenylcyclohexylcarbamide** (FOUQUE), A., i, 556.
- Phenylcyclohexylcarbinol** (REICH, VAN WINCK, and WAELE), A., i, 333.
- Phenylcyclohexylnitrosamine** (FOUQUE), A., i, 556.
- N*-Phenylhomomorpholine**, and *p*-nitroso-, and their salts and derivatives (v. BRAUN and BRAUNSDORF), A., i, 436.
- Phenylhydrazine**, action of chloroform on (BARNETT), A., i, 692.
- action of cyanogen haloids on (PELLIZARI), A., i, 620.
- preparation of *α*-acyl derivatives of (SHORT), T., 1445.
- estimation of, volumetrically (LING and NANJI), A. ii, 601.
- Phenylhydrazine, *p*-, amino-, hydrochloride** (FRANZEN and STEINFÜHRER), A., i, 463.
- 2-chloro-5-nitro-** (PERKIN and PLANT), T., 1837.
- 5-chloro-2:4-dinitro-**, preparation and derivatives of (BORSCHKE), A., i, 461.
- 2:4:6-trinitro-**, condensation of quinones with (BORSCHKE), A., i, 624.
- nitrocyano-**, and their derivatives (BORSCHKE), A., i, 460.
- β*-Phenylhydrazinoisobutyl-*p*-hydroxy-*o*-tolyl ketone, and *β*-*p*-bromo- and *β*-*p*-nitro-, and their *p*-phenylhydrazones** (v. AUWERS and LAMMERHIRT), A., i, 464.
- β*-Phenylhydrazine-*β*-phenylethane, *α*-bromo-*α*-nitro-** (WORRELL), A., i, 411.
- Phenylhydrazones**, catalytic hydrogenation of (MAILHE), A., i, 483.
- Phenylhydrazones, *p*-nitro-, quinoxid salts of** (CIUSA), A., i, 63.
- 1-Phenylhydrindene** (MAYER, SIEGLITZ, and LUDWIG), A., i, 555.
- β*-Phenylhydroxylamine**, preparation of, from nitrobenzene (LAPWORTH and PEARSON), T., 765.
- action of methyl alcohol on, in sulphuric acid (BAMBERGER), A., i, 718.
- condensation of, with hydroxymethylene-compounds and carbinols (RUPE and DIEHL), A., i, 425.
- β*-Phenylhydroxylamine, *p*-bromo- and *p*-chloro-, and their reactions with sulphuric acid** (BAMBERGER), A., i, 719, 724, 725.
- m*-chloro-** (HAWORTH and LAPWORTH), T., 773.
- nitroso-**, action of acids on (BAMBERGER and KÖPCKE), A., i, 134.
- ammonium salt** (*cupferron*), use of, in separation of zirconium and uranium (ANGELETTI), A., ii, 524.
- 2-Phenyl-5-hydroxymethylloxazolidine**, and its salts (BERGMANN, BRAND, and DREYER), A., i, 445.
- Phenyl-4-hydroxy-*β*-naphthaquinone-2-imide disulphide** (STAHRFOSS), A., i, 794.
- Phenyl-*p*-hydroxyphenyl-*p*-tolylcarbinol** (HAHN), A., i, 243.
- 1-Phenyl-3-*p*-hydroxy-*o*-tolyl-5-methylpyrazoline** (v. AUWERS and LAMMERHIRT), A., i, 464.
- Phenyliminobenzophenone**, additive compound of phenylbenzhydrazylamine and (ALESSANDRI), A., i, 570.
- 2-Phenylimino-3-bromophenyl-4-thiazolidones**, and 2-*p*-bromo-, and their derivatives (DAINS, IRVIN, and HARREL), A., i, 362.
- Phenyliminocamphor, *o*- and *p*-nitro-** (FORSTER and SAVILLE), T., 794.
- 2-Phenylimino-3-*p*-chlorophenyl-4-thiazolidone**, and 2-*p*-chloro-, and their derivatives (DAINS, IRVIN, and HARREL), A., i, 362.
- 5-Phenyliminonaphthaphenthiazine *oo*-disulphide** (STAHRFOSS), A., i, 457.
- 2-Phenylindazole, 3-chloro-5-nitro-** (KENNER and WITHAM), T., 1057.

1. Phenylindene, pyrogenic distillation of (MAYER, SIEGLITZ, and LUDWIG), A., i, 554.
2. Phenylindene (MAYER, SIEGLITZ, and LUDWIG), A., i, 555.
2. Phenylindoxyl, 6-nitro-, and its derivatives (RUGGLI and BOLLIGER), A., i, 812.
- Phenylmercurichlorides (KHARASCH and CHALKLEY), A., i, 377.
- Phenylmercurithiocyanate (STEINKOPF), A., i, 632.
- Phenylmethoxymethyleneacetic acid. See *β*-Methoxyatropic acid.
- β*-Phenyl-*β*-*p*-methoxyphenylisossuccinic acid, metallic salts (BAILLON), A., i, 249.
- Phenyl 4-methoxystyryl ketone, 2-hydroxy-, derivatives of (v. AUWERS and ANSCHÜTZ), A., i, 688.
- 9-Phenylmethylamino-9:10 dihydroanthracene (BARNETT and COOK), T., 912.
- Phenylmethylarsine oxide (STEINKOPF and SCHWEN), A., i, 695.
- 1-Phenyl-6-methylbenzimidazole, 5-chloro- (MORGAN and CHALLENGER), T., 1543.
- 1-Phenyl-5-methylbenzothiazole, 4'-amino-, diazo-compounds of (MORGAN and WEBSTER), T., 1070.
- 4'-chloro-, and 4'-cyano- (MORGAN and WEBSTER), T., 1074.
- 1-Phenyl-5-methylbenzothiazole-4'-azo-*β*-naphthol (MORGAN and WEBSTER), T., 1073.
- 1-Phenyl-5-methylbenzothiazole-4'-di-azosulphonic acids, sodium salts of (MORGAN and WEBSTER), T., 1075.
- 1-Phenyl-5-methylbenzoxazole (HENRICH and MATULKA), A., i, 889.
- 2-Phenyl-4-methyl-1:2:3-benzotriazole, 5-amino- (SCHMIDT and HAGENBÜCKER), A., i, 899.
- 2-Phenyl-6-methyl-1:2:3-benzotriazole, 5-amino-, and its sodium salt (SCHMIDT and HAGENBÜCKER), A., i, 897.
- 8-Phenyl-8-methylbutane, *o*-*β*-di-hydroxy- (CLAISEN and TIETZE), A., i, 264.
- β*-Phenyl- γ -methyl- Δ^8 -butene (GLATFIELD and MILLIGAN), A., i, 63.
- Phenylmethylcarbiol, catalytic dehydration of (WUYTJ), A., i, 506.
- Phenylmethylcarbonylurethane (PUVAL and MONTAGNE), A., i, 103.
- 6-Phenyl-2-methylcinchomeric acid, and its picate and ethyl ester (MÜMM and BÖHME), A., i, 439.
- Phenylmethylethylazonium iodide, compound of thiocarbamide with (SINGH and LAL), T., 211.
- α*-Phenyl-*β*-methyl- Δ^8 -hexene (REICH, VAN WIJCK, and WAELLE), A., i, 333.
- as*-Phenylmethylhydrazine, action of *β*- and γ -trinitrotoluenes on (GIUA), A., i, 193.
- Phenylmethylhydrazine, *p*-amino-, acetyl derivative (PERKIN and PLANT), T., 1835.
- Phenylmethylnitroamine, trinitro- (*tebryl*), and its 3-hydroxy-derivative, thermal decomposition of (HINSHELWOOD), T., 722.
- Phenylmethylnitroscamine, *m*-bromo-, and 2:4-dichloro- (SCHMIDT and SCHUMACHER), A., i, 660.
- α*-Phenyl-*β*-methyl- Δ^8 -pentene (REICH, VAN WIJCK, and WAELLE), A., i, 333.
- α*-Phenyl-*β*-methylpropane-*αβ*-diol, pinacol transposition of, and its derivatives (TIFFENHAU and ONÉKHOFF), A., i, 243, 788; (LÉVY), A., i, 788.
- 1-Phenyl-3-methylpyrazole, 4-cyano- (BENARY and SCHMIDT), A., i, 777.
- 1-Phenyl-3-methylpyrazole-5-carboxyanilide, 4-cyano- (BENARY and SCHMIDT), A., i, 777.
- 1-Phenyl-3-methylpyrazole-5-carboxylic acid, 4-cyano- (BENARY and SCHMIDT), A., i, 777.
- 1-Phenyl-3-methylpyrazole-5-carboxylophenylhydrazide, 4-cyano- (BENARY and SCHMIDT), A., i, 777.
- 6-Phenyl-2-methylpyridine methoperchlorate (KÖNIG and TREICHEL), A., i, 738.
- 1-Phenyl-5-methylpyrrolidone, 1-nitro- (EMMETT and MEYER), A., i, 268.
- 2-Phenyl-4-methylthiazoline, and its salts (BOSE), A., i, 13.
- 2-Phenyl-5-*β*-naphthyl-1:2:3:4:5:6-benzoditriazole (SCHMIDT and HAGENBÜCKER), A., i, 898.
- Phenyl-*α*-naphthylbenzylmethylarsonium salts (BURROWS and TURNER), T., 435.
- Phenyl-*α*-naphthylmethane, *α*-amino-, derivatives of, with aldehydes (BERLINGOZZI), A., i, 107.
- Phenyl-*α*-naphthylmethane-2'-carboxylic acid, and mononitro- (SCHOLL, SEER, and ZINKE), A., i, 678.
- Phenyl-naphthylmethanecarboxylic acids, hydrogenation of (WILLSTÄTTER and WALDSCHMIDT-LEITZ), A., i, 667.
- Phenyl-*α*-naphthylmethylallylarsonium bromide (BURROWS and TURNER), T., 434.
- Phenyl-*α*-naphthylmethylarsine, and its methiodide and oxide (BURROWS and TURNER), T., 432.

- Phenyl- α -naphthylmethylarsonium** hydroxide, hydroxy-, bromocamphor-sulphonate of (BURROWS and TURNER), T., 432.
- Phenylnitroamine**, *m*-nitro- (BAMBERGER), A., i, 135.
- 4-Phenyl-2-*o*- and *p*-nitrobenzyloxy-methylquinolines** (FISCHER, SCHEIBE, MEKKEL, and MÜLLER), A., i, 55.
- Phenyl-2:6-dinitrophenyl-*o*-phenylene-diamine** (KEHRMANN and EFFRONT), A., i, 602.
- Phenylnitrosoaminocamphor**, preparation of, and *o*- and *p*-nitro- (FORSTER and SAVILLE), T., 792.
- α -Phenyl- β -nitro-*m*-tolyl- α -methylhydrazines** (GIUA), A., i, 193.
- α -Phenyl- Δ^8 -octene** (REICH, VAN WICK, and WAELLE), A., i, 333.
- Phenylpiazone** (FARGHER and PERKIN), T., 1744.
- Phenyl-*m*-opiazone** (FARGHER and PERKIN), T., 1743.
- Phenylloxalimino-chloride**, *m*-nitro- (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 435.
- Phenylloxalylanilide** (STOLLÉ and KNEBEL), A., i, 578.
- Phenylloxalyl-*p*-toluidide** (STOLLÉ and KNEBEL), A., i, 578.
- 1-Phenylindole**, and 3:3-dichloro- (STOLLÉ), A., i, 596.
- Phenylcyclopentamethylenearsine** bromocyanide and hydroxybromide (STEINKOFF and WOLFRAM), A., i, 471.
- α -Phenylpentan-3-one**, and its semicarbazone (DIELS and POETSCH), A., i, 675.
- ϵ -Phenyl- Δ^8 -pentene**, hydroxy-, and its derivatives (HELFERICH and LECHER), A., i, 421.
- 5-Phenylphenazonium salts**, nitro- and nitroamino- (KEHRMANN and EFFRONT), A., i, 602.
- Phenyl-*o*-phenyleneisoummeline**, and its salts (PELLIZZARI), A., i, 622.
- Phenyl-*o*-phenylenediguanide**, and its salts (PELLIZZARI), A., i, 622.
- Phenyl-*o*-phenylene- β -arylcaramide**, and its hydrochloride (PELLIZZARI), A., i, 622.
- Phenyl-*o*-phenyleneisomelamine** (PELLIZZARI), A., i, 622.
- Phenyl-*o*-phenylenemethyldiamine**, 2:6-dinitro- (KEHRMANN and EFFRONT), A., i, 602.
- Phenyl- γ -phenylpropylmethylarsine**, and its derivatives (BURROWS and TURNER), T., 431.
- α -Phenylpropane**, $\beta\beta$ -*tri*-bromo- (LESPIEAU), A., i, 656.
- γ -Phenyl- Δ^8 -propene**, β -mono- and $\alpha\beta$ -*di*-bromo- (LESPIEAU), A., i, 656.
- Phenyl propenyl ketone-*p*-nitrophenylhydrazones** (V. AUWERS and LÄMMERHIRT), A., i, 464.
- α -Phenylpropinene**, *di*-bromo- (WOHL and JASCHINOWSKI), A., i, 317.
- γ -Phenyl- Δ^8 -propinene**, and its metallic derivatives (LESPIEAU), A., i, 656.
- Phenylpropionamide**, action of sodium hypochlorite on (RINKES), A., i, 27.
- β -Phenylpropionanilide**, β -amino- (MCKENZIE and BARROW), T., 71.
- β -Phenylpropionic acid**, α -bromo- β -hydroxy-, salts of (READ and ANDREWS), T., 1778.
- m*-chloro-, and its derivatives (KENNER and WITHAM), T., 1460.
- α -hydroxy-, resolution of, and its *l*-bornyl and *l*-menthyl esters (WERN and WRIGHT), T., 798.
- dl*- β -Phenylpropionic acid**, α -bromo-, *l*-menthyl ester, preparation of (SHIMOMURA and COHEN), T., 1821.
- β -Phenylpropionic acids**, bromohydroxy-, optically active (BERNER and RIBER), A., i, 788.
- Phenylpropionylbenzylalanine**, and its amide (BOUGAULT), A., i, 178.
- β -Phenylpropiophenone**, β -amino-, and its salts (MCKENZIE and BARROW), T., 69.
- γ -Phenylpropyl alcohol**, preparation of (BURROWS and TURNER), T., 428.
- Phenylpropylcarbinylurethane** (PYVAL and MONTAGNE), A., i, 108.
- Phenylisopropylcyanacetamide** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- γ -Phenylpropyldimethylarsine**, and its derivatives (BURROWS and TURNER), T., 429.
- Phenylisopropylhydantoin** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- Phenyl- α -propyl ketone**, and amino-, chloro-, hydroxy-, and nitro-, and their derivatives (MORGAN and HICKINBOTTOM), T., 1882.
- Phenyl propyl ketone**, 2:4-*di*-hydroxy- (JOHNSON and LANE), A., i, 341.
- Phenylisopropylmalononitrile** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 619.
- γ -Phenylpropylmethylbromoarsine** (BURROWS and TURNER), T., 430.
- γ -Phenylpropylmethylchloroarsine** (BURROWS and TURNER), T., 430.
- 5-Phenylpyrazole-4-carboxylic acid**, and its salts and derivatives (DAISS and LANG), A., i, 513.
- 1-Phenyl-4-pyridone**, salts of (SMIRNOV), A., i, 595.

- 1-Phenyl-3-pyrrylpyrazolone (ÖDDO), A., i, 130.
- Phenylpyruvic acid, action of ammonia on (BOUGAUT), A., i, 177.
- 2-Phenylquinoline, 4-hydroxy-, oxide and 4-hydroxy-3-cyano-, and 3-nitro-4-hydroxy- (GABRIEL and GERHARD), A., i, 688.
- 2-Phenylquinoline-3-carboxylic acid, 4-hydroxy-, ethyl ester (GABRIEL and GERHARD), A., i, 688.
- 2-Phenylquinoline-4-carboxylic acid, benzyl ester (SOCIETY OF CHEMICAL INDUSTRY IN BASLE), A., i, 737.
- 1-Phenylsemicarbazide-4-carboxylic acid, ethyl ester (DAINS and WERTHEIM), A., i, 62.
- Phenyl-β-semicarbazidopropyl ketone semicarbazone (V. AUWERS), A., i, 466.
- Phenyl styryl ketone, *p*-bromo-, and *p*-chloro- (DILTHEY, BAURIEDER, GESSLEBRECHT SEEGER, and WINKLER), A., i, 189.
- 4-Phenyl-2-styrylquinoline (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- 2-Phenyltetrahydrofuran, 5-hydroxy- (HELFERICH and LECHER), A., i, 421.
- α-Phenyl-β-theobrominoethanol, and 3:4-dihydroxy-, and its triacetyl derivative (MANNICH and KROLL), A., i, 885.
- α-Phenyl-β-theophyllinoethanol, and 3:4-dihydroxy-, and its triacetyl derivative (MANNICH and KROLL), A., i, 885.
- 3-Phenyl-2:4-thiazole-dione, 3-*p*-bromo- and 3-*p*-chloro- (DAINS, IRVIN, and HARREL), A., i, 362.
- Phenylthiocarbamic acid, β-hydroxy-ethyl ester (BENNETT and WHINCOFF), T., 1861.
- Phenylidithiocarbamic acid, hydrazine salt (LOSANTICH), T., 765.
- N-Phenylthiolanthranilic acid (BINZ and HOLZAPFEL), A., i, 31.
- Phenyl-*o*-toluidine, 2:4:6-trinitro- (KEHRMANN, RAMM, and SCHMAJEW-SKI), A., i, 600.
- N-Phenyl-*m*-toluidine, 2-chloro-4-nitro- (MORGAN and GLOVER), T., 1704.
- N-Phenyl-*o*- and -*m*-toluidines, chloro-nitro-, and their nitrosoamines (MORGAN and JONES), T., 190.
- Phenyl-*m*-tolylamine, dinitrohydroxy-derivatives, and their acetyl derivatives (GIUA and GIUA), A., i, 858.
- 3-Phenyl-3:4-tolylene-diamine and -di-azoinine, 6-chloro- (MORGAN and JONES), T., 191.
- Phenyl-*p*-tolylsulphone, 2-amino-5-hydroxy- (HALBERKANN), A., i, 661.
- Phenyltrimethyl ethyl and methyl ethers (V. AUWERS and FRÜHLING), A., ii, 230.
- Phenyltrimethylarsonium cadmi-iodide (BURROWS and TURNER), T., 1449.
- salts (STEINKOPF and SCHWEN), A., i, 695.
- Phenylvinylcarbonylurethane (PUYAL and MONTAGNE), A., i, 108.
- Phloro-*o*-butyrophenone, and its dihydrate (KARRER and ROSENFELD), A., i, 793.
- Phloroglucinol, condensation of carbonyl compounds with (V. EULER), A., i, 563.
- action of, with sodium hydrogen sulphite (FUCHS), A., i, 241.
- Phloro-*o*-hexaphenone, and its monohydrate (KARRER and ROSENFELD), A., i, 793.
- Phloro-*o*-octophenone, and its monohydrate (KARRER and ROSENFELD), A., i, 793.
- Phloro-*o*-nanthophenone, and its monohydrate (KARRER and ROSENFELD), A., i, 793.
- Phloro-*o*-stearophenone (KARRER and ROSENFELD), A., i, 793.
- Phloro-*o*-valerophenone, and its monohydrate (KARRER and ROSENFELD), A., i, 793.
- Phosphatides, estimation of (BRAUNS and MACLAUGHLIN), A., ii, 72.
- Phosphorescence, and photo-electric conductivity (GUDDEN and POHL), A., ii, 145.
- Phosphorescent substances, action of red and infra-red rays on (CURIE), A., ii, 233, 516.
- Phosphorus, luminescence of (RAYLEIGH), A., ii, 546.
- oxidation and luminescence of (WEISER and GARRISON), A., ii, 248, 695; (DAMIENS), A., ii, 636.
- nature of ions produced by (McCLELLAND and NOLAN), A., ii, 8.
- loss of, by volatilisation (HILLEBRAND and LUNDELL), A., ii, 129.
- oxidation of (JÖRISSEN), A., ii, 638.
- ignition of, in a bell jar over water (REBENSTORFF), A., ii, 105.
- white, critical solution temperatures of, with various liquids (HILLEBRAND and BUEHRER), A., ii, 24.
- vapour pressure of (McRAE and VAN VOORHIS), A., ii, 323.
- Phosphorus alloys with copper, thermal and electrical conductivity of (PFLEIDERER), A., ii, 296.

- Phosphorus compounds**, effect of fatty acids on the excretion of (TELFER), A., i, 700.
- Phosphorus trihydride (phosphine)**, viscosity and molecular dimensions of (RANKINE and SMITH), A., ii, 664.
- triiodide**, compound of, with phenyl-dimethylarsine (BURROWS and TURNER), T., 1449.
- Phosphoric acid**, distribution of, in the blood of children (MCKELLIPS, DE YOUNG, and BLOOR), A., i, 698; (JONES and NYE), A., i, 753.
- formation and distribution of, in muscle (EMBDEN and GRAFE; EMBDEN and ADLER; LYDING; PANAJOTAKOS; ADAM), A., i, 529.
- estimation of (COPAU), A., ii, 707.
- estimation of, colorimetrically (GREGOIRE), A., ii, 462.
- estimation of, gravimetrically (EMBDEN), A., ii, 462.
- estimation of, as magnesium pyrophosphate (BALAREFF), A., ii, 518.
- estimation of, in presence of salts (DEBOURDEAUX), A., ii, 130.
- estimation of, in serum (WIENER), A., ii, 347.
- Phosphates in human blood** (FEIGL), A., i, 73, 143.
- distribution of, in blood (IVERSEN), A., i, 380.
- detection of, in soils (SHEDD), A., ii, 274.
- estimation of, in foods (TILLMANS and BOHRMANN), A., ii, 348.
- estimation of, in glycerophosphates (LIZIUS), A., ii, 518.
- citric acid-soluble, estimation of, in superphosphates (MÜLLER), A., ii, 275.
- estimation of, in urine (FISKE), A., ii, 411.
- estimation of, in water (FLORENTIN), A., ii, 707.
- Pyrophosphoric acid**, detection of, in presence of ortho- and metaphosphoric acids (BALAREFF), A., ii, 708.
- Pyrophosphates**, estimation of, volumetrically (LUTZ), A., ii, 463.
- Hypophosphorous acid**, studies on (MITCHELL), T., 1266.
- use of, in gravimetric analysis (MOSE and KITTL), A., ii, 521.
- Superphosphates**, estimation of citric-soluble phosphates in (MÜLLER), A., ii, 275.
- Phosphorus organic compounds** (CONANT and MACDONALD), A., i, 69.
- Phosphoric acid**, substituted glucose esters of (LEVENE, MEYER, and WEBER), A., i, 845.
- Phosphorus detection and estimation**:-
- detection of (ZIMMERMANN), A., ii, 276.
- estimation of, microchemically (v. EULER and SVANBERG), A., i, 522.
- estimation of, in copper phosphide (GARCIA), A., ii, 346.
- estimation of, in iron, steel, etc. (KINDER), A., ii, 594.
- estimation of, in steel (ARIANO), A., ii, 347.
- estimation of, in organic substances (GRÉGOIRE and CARIAUX), A., ii, 461.
- Phosphotungstic acid**, reactions of alkaloids with (HEIDUSCHKA and WOLF), A., ii, 469.
- Phosponic acids** (CONANT and MACDONALD), A., i, 70.
- Photocatalysis** (BALY, HEILBRON, and BARKER), T., 1025.
- Photochemical effects** in relation to valency (KÖGEL), A., ii, 289.
- equivalent law, Einstein's, application of (NODDACK), A., ii, 568.
- processes, mechanism of (COHEN and TRAMM), A., ii, 476.
- influence of temperature on (PLOTNIKOW), A., ii, 146.
- reactions and thermal reactions (DHAR), A., ii, 37.
- with organic acids and their salts (JÄGER), T., 2070.
- catalytic effect of electrolytes on (BENGER), A., ii, 477.
- studies (PLOTNIKOW), A., ii, 76.
- Photoelectric cells**. See Cells.
- investigations with metallic salt solutions (SWENSSON), A., ii, 183.
- sensitiveness and passivity of metals (FRESE), A., ii, 569.
- Photographic images**, development of (STIEGMANN), A., ii, 568.
- Photomicrography** of transparent crystals (FRANÇOIS and LORMAND), A., ii, 626.
- Photosynthesis**, measurement of (OSTERHOUT and HAAS), A., i, 293.
- in relation to the origin and continuance of life on the earth (MOORE), T., 1555.
- in algae (WURMSER and DUCLUX), A., i, 211.
- in marine algae (MOORE, WHITLEY, and WEBSTER), A., i, 211.
- Phototropy** (GALLAGHER), A., i, 715.
- in solution (SINGH), A., i, 351.

- Phthalanil**, *p*-amino-, acetyl derivative (LIEB and SCHWARZER), A., i, 691.
- cis*-**Phthalatodithylenediaminecobaltic salts** (DUFF), T., 1984.
- Phthaleins**, mercury derivatives of (WHITE), A., i, 71.
- Phthalic acid** (*o*-*phthalic acid*), solubility of, in water and in sodium sulphate solutions (McMASTER, BENDER, and WEILL), A., i, 511.
- salts, behaviour of buffer mixtures of (ZOLLER), A., ii, 387.
- anhydride and esters, action of, with magnesium phenyl bromide (HOWELL), A., i, 42.
- Phthalic acid**, 4-chloro-, preparation of (MOORE, MARRACK, and PROUD), T., 1788.
- 3:6-dihydroxy-, ethyl and methyl esters, and their derivatives (HELFE-RICH), A., i, 185.
- iso*-**Phthalic acid** (*m*-*phthalic acid*), 4-amino-, methyl ester, preparation of (SMODLAKA), A., i, 418.
- 4:6-dibromo-, and its methyl ester (ECKERT and SEIDEL), A., i, 863.
- Phthalic acids**, halogenated, replaceability of the halogen in (ECKERT and SEIDEL), A., i, 862.
- Phthalic anhydride**, preparation of (WOHL), A., i, 418; (SASA), A., i, 511.
- condensations of aromatic amines with (LIEB and SCHWARZER), A., i, 690.
- Phthalimides**, substituted, application of Hofmann's reaction to (MOORE, MARRACK, and PROUD), T., 1786.
- α -**Phthalimido-*o*-aminoacetophenone**, and its hydrochloride (GABRIEL and GERHARD), A., i, 441.
- α -**Phthalimido- α -dichloropropane** (BOESE), A., i, 61.
- β -**Phthalimidoethylpyridinium salts** (GABRIEL), A., i, 58.
- ω -**Phthalimido-*o*-nitroacetophenone** (GABRIEL and GERHARD), A., i, 441.
- Phthalimidopropylpyridinium salts** (BOESE), A., i, 60.
- β -**Phthalimino- β -phenylpropionic acid**, and its derivatives (McKENZIE and BARROW), T., 73.
- β -**Phthalimino- β -phenylpropionophenone** (McKENZIE and BARROW), T., 74.
- Phthaloyl-1:5-*d*-aminoanthraquinone** (LIER and SCHWARZER), A., i, 691.
- 1:2-Phthaloylanthraquinone** (FAIRBOURNE), T., 1580.
- iso*-**Phthalylidenedi-9:9'-fluorene**, 2:2':7:7'-tetrachloro- (STRAITZ and SCHATZKES), A., i, 782.
- Physical constants**, fundamental (COLLINS), A., ii, 86.
- properties, variation of, in homologous series (CUI), A., ii, 429; (TAMMANN), A., ii, 430.
- Physico-chemical symbols**, International, T., 502.
- Physiological action and isomerism** (CUSHNY), A., i, 289.
- Physiological fluids**, concentration of (YAMAGUCHI), A., i, 84.
- Physostigmine**. See *Eserine*.
- Phytase**, activity of (COLLATZ and BAILEY), A., i, 369.
- Phytolacca dioica*, constituents of the fruit of (ARREGUINE), A., i, 487.
- Picoline derivatives**, crystallography of (PORTER), T., 1769.
- 1:2(2':3')-Picolinylene-1:3-benzodiazole** (BISTRZYCKI and LECOCQ), A., i, 457.
- Picric acid**, preparation of, from phenol-sulphonic acids (KING), T., 2105.
- rate of reaction of, with nitrating acids (HAMMICK), A., i, 239.
- equilibrium of 5-phenylacridine with (BASSETT and SIMMONS), T., 416.
- compounds of, with metallic amines (EPHRAIM), A., i, 839.
- α -**Picrotinic acid**, degradation of (HORMANN and HAGENDORN), A., i, 347.
- Picrotinketol**, derivatives of (HORMANN and HAGENDORN), A., i, 347.
- Picrotoxin** (HORMANN and HAGENDORN), A., i, 347; (HORMANN and BEHSCHNIDT), A., i, 575.
- Picrotoxic acids**, hydroxy- α - and - β -bromo-, and their derivatives (HORMANN and BEHSCHNIDT), A., i, 575.
- Picrotoxins**, bromo-, action of nitric acid and halogen acids on (HORMANN and BEHSCHNIDT), A., i, 575.
- Piezometric analysis** (TIMMERMANS), A., ii, 239.
- Pikamar**, synthesis of (MAUTHNER), A., i, 726.
- α -**Pimarabietic acid** (DUPONT), A., i, 510.
- Pimento of Jamaica**. See *Anomus janatensis*.
- Pinabietene**, and its sulphonic acid (VIRTANEN), A., i, 670.
- Pinabietic acid**, and its salts, and derivatives (ASCHAN; ASCHAN and EKROLM; VIRTANEN), A., i, 669.
- Pinacolin transposition** (LEVY), A., i, 233, 788, 861; (TIFFENEAU and ORSKHOFF), A., i, 243, 565, 788; (BILLARD), A., i, 565; (ORSKHOFF and TIFFENEAU), A., i, 566.
- Pinene** (RUZICKA and TREBLER), A., i, 36, 37, 798.

- Pinene**, action of hypochlorous acid on (HENDERSON and MARSH), T., 1492.
hydrochloride, action of formic acid on (LUTTRINGER and DUBOSC), A., i, 115.
nitroschloride, preparation of (RUPE and LÖFFEL), A., i, 258.
derivatives, conversion of, into *iso*-bornylesters and camphene (WESSON), A., i, 796.
- Pinene**, nitroso-, constitution and derivatives of (RUZICKA and TREBLER), A., i, 573.
- α -Pinene**, action of bromine on (PARSELLE), A., i, 575.
- δ -Pinene** (*dihydroverbenene*) (BLUMANN and ZEITSCHSEL), A., i, 427.
- tert.*-Pinene** hydrochloride (ASCHAN), A., i, 795.
- Pinic acid**, lead salt, distillation of (ÖSTLING), A., i, 665.
ethyl and methyl esters (ÖSTLING), A., i, 346.
- Pinocampnone**, synthesis of (RUZICKA and TREBLER), A., i, 796.
- Pinocampnyltrimethylammonium iodide** (RUZICKA and TREBLER), A., i, 37.
- Pinonic acid** semicarbazone (FROMM and KLEIN), A., i, 797.
derivatives of (RUZICKA and TREBLER), A., i, 38.
- Pinus***, pimaric acid from the resin of (DUPONT), A., i, 487, 510.
- Pinus sylvestris***, turpentine from resin of (HENRICH), A., i, 679.
- Piperidine**, action of alkyl nitrates on (GIBSON and MACHEIH), T., 438.
action of, on silicon organic compounds (KIPPING and SANDS), T., 848.
compound of *s*-trinitroanisole with (GUA, MARCELLINO, and CURTI), A., i, 194.
- β -Piperidino- α -ethoxytetrahydronaphthalene** (TETRALIN G. m. b. H.), A., i, 559.
- 2-Piperidinotetrahydronaphthalene**, 1-hydroxy-, and its salts and derivatives (STRAUS, ROHRBAUER, and LEMMEL), A., i, 173.
- 4-Piperidone**, syntheses of (RUZICKA and FORNASIK), A., i, 52.
- Piperitone**, and its derivatives (READ and SMITH), T., 779.
constitution of (GIVAUDAN & Co.), A., i, 793.
and its derivatives (SIMONSEN), T., 1644.
- Piper methysticum***. See Kava-root.
- Piperonal**, 6-amino-, preparation of, and its condensation with acetaldehyde (SONN and BÄHRSCHEKE), A., i, 805.
- Piperonaldehyde**, 6-amino-, 6-chloro-, and 6-iodo-, and their derivatives (RILLIET and KREITMANN), A., i, 568.
- Piperonylallylene** (NAGAI), A., i, 858.
- 9-Piperonylfluorene** (DE FAZI), A., i, 569.
- Piperonylidene-*p*-anisidine**, 6-amino- (RILLIET and KREITMANN), A., i, 568.
- 9-Piperonylidenefluorene**, and its picate (DE FAZI), A., i, 569.
- 9-Piperonylidenefluorene**, 2,7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 782.
- Piperonylidene-methylenedioxybenzo-suberone** (BORSCHKE, ROTH, and EBERLEIN), A., i, 166.
- Piperonylidene-toluidines**, 6-amino- and 6-nitro- (RILLIET and KREITMANN), A., i, 567.
- 5-Piperonyl-5-methylhydantoin** (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618.
- α -Piperonylpropionic acid**, α -amino-, and its methyl ester (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618.
- Piperonyl-*iso*-propylaminomethanol** (ROSENEMUND), A., i, 537.
- Piperonyl-*iso*-propylmethylaminomethanol** (ROSENEMUND), A., i, 537.
- Pitchblende** from Bengal (TIPPER), A., ii, 269.
- Plants**, constituents of (v. LIEPMANN), A., i, 86.
yielding food from Formosa, constituents of (OKUMURA), A., i, 88.
microchemistry of (MOLISCH), A., i, 213.
osmotic concentration and conductivity of tissue fluids of (HARRIS, GÖPNER, and LAWRENCE), A., i, 483.
assimilation of carbon dioxide by (FRENKEL), A., i, 703; (ROUGE), A., i, 911.
assimilation and respiration of (WILMOTT), A., i, 911.
respiration of (MAQUENNE and DEMOUSSY), A., i, 758.
resistance of, to asphyxia (MAQUENNE and DEMOUSSY), A., i, 759.
function of alkaloids in (CIAMICIAN and RAVENNA), A., i, 85.
effect of ammonium sulphate on the growth of, in presence of iron phosphates (JONES and SHIVE), A., i, 838.
toxicity of antimony, arsenic, and fluorine compounds towards (WÖBER), A., i, 213.
anthocyanins and anthocyanidins in (EVEREST and HALL), A., i, 485.

- Plants, colloids in** (SAMEC and HAERDTL), A., i, 226; (SAMEC and MATULA), A., i, 397; (SAMEC and MAYER), A., i, 400, 707.
- hydrocyanic acid in** (MENAUL; ROSENTHALER), A., i, 484.
- inositol-phosphoric acid in** (ANDERSON), A., i, 152.
- iron in** (MAQUENNE and CERIGHELLI), A., i, 759.
- manganese in** (BERTRAND and ROSENBLATT), A., i, 759.
- effect of the hydrogen-ion concentration of nutrient solutions on the growth of** (MCALL and HAAG), A., i, 911.
- effect of organic compounds on the development of** (CIAMICIAN and RAVENNA), A., i, 483.
- oxydases in** (ONSLow), A., i, 485.
- peroxydases in** (FERNANDEZ), A., i, 485.
- potassium in** (KOSTYCHEV and ELIASBERG), A., i, 83.
- effect of potassium salts on the growth of** (SMITH and BUTLER), A., i, 482.
- availability of potassium in orthoclas solutions to** (BREAZEALE and BRIGGS), A., i, 388.
- ratio of the bases, potash, lime, magnesia, in** (LAGATU), A., i, 214.
- effect of sulphates on the growth of** (MILLER), A., i, 911.
- occurrence of thiocyanic acid in** (DEZANI), A., i, 643.
- reaction of zinc chloro-iodide with the ash of** (MOLISCH), A., i, 218.
- incrutive tissues of** (SCHMIDT and GRAUMANN), A., i, 912.
- cultivated, carbon nutrition in** (BORNE-MANN), A., i, 532.
- green, constituents of** (FRANZEN), A., i, 644; (FRANZEN, WAGNER, and SCHNEIDER), A., i, 838.
- assimilation of carbon dioxide by** (MAZE), A., i, 151, 209.
- higher, nitrogen metabolism of** (CHIDNALL and SCHRYVER), A., i, 482.
- leguminous, effect of fertilisers on the growth of** (MAGTAGGART), A., i, 913.
- manganese in** (JONES and BULLIS), A., i, 840.
- effect of soil temperature on the growth of nodules on roots of** (JONES and TISDALE), A., i, 914.
- water, bubbling experiments with** (WILMOTT), A., i, 911.
- detection of dextrose in** (BRIDEL and ARNOLD), A., ii, 465.
- Plant cells, effect of neutral salts on the protoplasm of** (BRENNER), A., i, 209.
- Plant cells, action of saponin on** (BOAS), A., i, 294.
- distribution of sodium salts in** (FENCOKA), A., i, 907.
- epidermal, permeability of, for urea** (HÖFLER and STIEGLER), A., i, 642.
- green, reduction of nitrates in** (WARBERG and NEGELEIN), A., i, 82.
- Plant extracts, antiscorbutic, detection of, colorimetrically** (BEZSSONOFF), A., ii, 608.
- Plant products, estimation of iron in** (MAQUENNE; MATHIEU), A., ii, 561.
- Plant tissues, formation of vitamin-A in** (COWARD and DRUMMOND), A., i, 837.
- estimation of nitrates and nitrites in** (STROWD), A., ii, 59.
- Platinum, pure, preparation of** (WICHERS), A., ii, 648.
- spongy, preparation of** (FEULGEN), A., ii, 266.
- L-series spectrum of** (DAUVILLIER), A., ii, 669.
- ultra-violet spark spectrum of** (L. and E. BLOCH), A., ii, 364.
- catalytic hydrogenation by means of** (WILSTÄTTER and WALDSCHMIDT-LEITZ), A., ii, 185.
- influence of arsenic, mercury, sulphur, and zinc on the catalytic activity of** (MAXTED), T., 225.
- sols, variation of the catalytic activity of** (ROCASOLANO), A., ii, 251, 321, 498, 542.
- in organic media, stability of** (LINDENMAN and SVEDBERG), A., ii, 548.
- Platinum black, effect of temperature on** (WRIGHT and SMITH), T., 1683.
- velocity of reduction by** (VAVON), A., ii, 542.
- Platinum metals, chemistry of** (REMY), A., ii, 209.
- action of sodium hyposulphite on salts of** (SAILER), A., ii, 513.
- Plazolite** (FOSBAG), A., ii, 270.
- Poirrier's Blue C4B, use of, as an indicator** (MESTREZAT), A., ii, 515.
- Poisoning by trinitrotoluene** (LEWIN), A., i, 640.
- "Polyacenaphthylene"** (DZIEWOŃSKI, PODGÓRSKA, LEMBERGER, and SUSZKA), A., i, 106.
- Polymerisation** (KIELDING), A., ii, 487.
- Polymethylene, isomerism of** (SKITA), A., i, 503.
- Polymethylene compounds, molecular refraction of** (EISENLOHR), A., ii, 229.
- Polypeptides, action of enzymes on** (ABDERHALDEN and HANDOVSKY; ABDERHALDEN and KÖRTEN), A., i, 547.

- Polyporus hispidus*, constituents of (ZELLNER), A., i, 213.
- Polyporus volcatus*, enzyme action in (SCHMITZ), A., i, 703.
- Polysaccharides** (KARRER and NÄGELI), A., i, 310, 311, 313; (KARRER and WIDMER), A., i, 310, 397, 771; (KARRER and LANG), A., i, 312; (KARRER, WIDMER, and SMIRNOV; KARRER), A., i, 765; (KARRER, NÄGELI, HURWITZ, and WÄLTI), A., i, 763.
- chemistry of (HERZFELD and KLINGNER), A., i, 97; (SAMEC), A., i, 225.
- constitution of (IRVINE and OLLHAM), T., 1744.
- acetolysis of (BERGMANN and BECK), A., i, 649.
- protective enzymes against (HERZFELD and KLINGER), A., i, 236.
- Polysulphides**. See under Sulphur.
- Poppy**, opium. See *Papaver somniferum*.
- Potassium**, arc and spark spectra of (SRELIGER and THÄER), A., ii, 566.
- vacuum arc spectrum of (DATTÀ), A., ii, 285.
- ionised, spectrum of (McLENNAN), A., ii, 667.
- in orthocase solutions and its availability to plants (BREAZEALE and BRIGGS), A., i, 388.
- calcium and magnesium, ratio of, in plants (LAGATU), A., i, 214.
- Potassium alloys** with bismuth, electromotive force of (KREMANN, FRITSCH, and LIEBL), A., ii, 342.
- with lead, thallium and tin, electromotive properties of (KREMANN and PRESZFREUND), A., ii, 332.
- with sodium, emission of electrons from (RICHARDSON), A., ii, 422.
- Potassium compounds**, vapour pressure of (JACKSON and MORGAN), A., ii, 260.
- in blood (MYERS and SHORT), A., i, 828.
- Potassium salts**, radioactivity, chemical character and physiological action of (R. F. LOEB; J. LOEB), A., i, 145.
- solubility of, in aqueous-alcoholic mixtures (PIERRAT), A., ii, 401.
- fusion of, and their mixtures with other salts (JÄNECKE), A., ii, 94.
- adsorption of (OPÉN and LANGELOUS), A., ii, 625.
- selective, absorption of, by animal cells (MITCHELL and WILSON), A., i, 830.
- in plants (KOSTYCHEV and ELIAS-RELO), A., i, 83.
- Potassium salts**, replacement of, by uranium in nutritive fluids (PETERS), A., i, 144.
- Potassium tri- and per-thiocarbonates** (YEOMAN), T., 46.
- chlorate, melting point of (CARPENTER), A., ii, 332.
- new crystalline form of (WOLCOTT), A., ii, 332.
- perchlorate, preparation of (BLAU and WEINGAND), A., ii, 333.
- chloride, heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.
- equilibrium of, with barium and sodium chlorides (JÄNECKE; VORTISCH), A., ii, 95, 96.
- equilibrium of, with calcium, magnesium, sodium, and strontium chlorides (SCHOLICH), A., ii, 97.
- equilibrium of, with lithium and sodium chlorides (SCHAEFFER), A., ii, 96.
- dichromate, crystallisation of (KIMURA), A., ii, 200.
- hydroxide, heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.
- fused, action of, on phenylglyceric acid (LE SUEUR and WOOD), T., 1697.
- iodide, luminescence of (WINTNER), A., ii, 670.
- reaction between iodic acid and (DHAR), A., ii, 37.
- titration of mercuric chloride with (KOLTHOFF), A., ii, 57.
- permanganate, preparation of, from ferromanganese (WILSON, HORSCH, and YOUTZ), A., ii, 644.
- reduction of, by arsenious acid (GELOSO), A., ii, 115.
- catalysis in titrations with (SCHNITZ), A., ii, 125.
- use of, in volumetric analysis (JILKE), A., ii, 712.
- nitrate, heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.
- aluminium nitrate (LA PORTE), A., ii, 699.
- ammonium nitrate, action of, on soils (KEMPF), A., i, 915.
- platinichloride, preparation and constitution of (VÜRTHEIM), A., ii, 61.
- sulphate, equilibrium in the system, glucinum sulphate, water, and (BRITTON and ALLMAND), T., 1463.
- hydrogen sulphate, action of fluorine on (BRUNNER), A., ii, 45.
- titanium sulphate (BILLY), A., ii, 456.

- Potassium arseno-thiosulphate**, preparation and properties of (v. SZILÁGYI), A., ii, 199.
- stibio-thiosulphate** (v. SZILÁGYI), A., ii, 207.
- Potassium organic compounds**:—
- bismuthobromocyanide (VOURNAZOS), A., i, 232.
 - copper cyanides (MOLES and IZAGUIRRE), A., i, 322.
 - ferri-cyanide, oxidation of ferrous salts by (HANNIK), A., ii, 685.
 - ferri- and ferro-cyanides, absorption spectra of (GETMAN), A., ii, 287.
 - action of hydrogen peroxide on (LUCK), A., i, 232.
 - zinc ferrocyanide, use of, in analysis of urine (THIÉRY), A., ii, 527.
 - ethyl sulphate, dimorphism of (HAMNICK and MULLALLY), T., 1802.
- Potassium detection and estimation**:—
- detection of, in presence of magnesium (LUDWIG and SPIRESU), A., ii, 215.
 - detection and estimation of, as picrate (MINOVICI and IONESCU), A., ii, 520.
 - estimation of (MOORE and CALDWELL), A., ii, 132; (SHERRILL), A., ii, 348; (BORSCHKE), A., ii, 349.
 - estimation of gravimetrically (VÉRHEIM), A., ii, 710; (CHRISTENSEN and FEILBERG), A., ii, 711.
 - estimation of, volumetrically (AJON), A., ii, 61; (MINOVICI and KOLLO), A., ii, 520.
 - estimation of, in presence of sodium, magnesium, sulphates, and phosphates (ATKINSON), A., ii, 654.
 - estimation of, in small amounts of serum (KRAMER and TRSDALL), A., ii, 412.
 - estimation of, in silicates (MORGAN), A., ii, 349.
 - estimation of, in soils (ARRHENIUS), A., ii, 412.
 - estimation of, in urine, blood, and faeces (TRSDALL and KRAMER), A., ii, 655.
- Potatoes**, gases in intercellular spaces of (MAGNESS), A., i, 759.
- Prabangic acid** (REINIZER), A., i, 352.
- Precipitates**, structure of (ODÉN), A., ii, 25.
- adsorption by (WEISER and MIDDLETON), A., ii, 89; (WEISER), A., ii, 625.
 - fractionation of (JOUBOIS, BOSSUET, and CHEVRY), A., ii, 264.
- Precipitation**, equilibria of (GRIESSBACH), A., ii, 314.
- periodic (SEKERA), A., ii, 31.
- Pressure**, critical. See Critical.
- Pressure gauge**, Pirani (GENERAL ELECTRIC CO., LTD.), A., ii, 591.
- Prochlorite** (SHANNON), A., ii, 459.
- Proline**, effect of, on nutritive value of pea proteins (STRE), A., i, 526.
- Prolylproline anhydride**, γ -hydroxy- (DAKIN), A., i, 86.
- n*-Propaldehyde-2,4-dinitro-*m*-tolyl-hydrazone** (BRADY and BOWMAN), T., 599.
- Propane**, physical properties of (MAASS and WRIGHT), A., i, 489.
- Propane**, $\alpha\beta$ -thio- α (DELEPINE and JAFFEUX), A., i, 156.
- Propane-8 γ -dicarboxylic acid**, α -cyano-, ethyl ester (INGOLD), T., 340.
- cyclo*Propane-1,2-dicarboxylic acid**, 1-bromo-, and its salts (INGOLD), T., 325.
- Propanesulphonic acid**, chloro-, barium salt (COFFEY), T., 95.
- β -chloro-, barium salt (POPE and SMITH), T., 398.
- Propan-8-oleamphorcarboxylolides** (HALLER and RANART-LUCAS), A., i, 673.
- cyclo*Propanol-1,2-dicarboxylic acid**, and its silver salt (INGOLD), T., 326.
- cyclo*Propanone** semicarbazone (INGOLD), T., 329.
- Δ^2 -*cyclo*Propene-1,2-dicarboxylic acid** (FARMER and INGOLD), T., 2015.
- N*-Propenylphthalamic acid**, silver salt (BOSE), A., i, 60.
- Propionic acid**, bornyl ester, preparation of (DUBOSC and LUTTRINGER), A., i, 115.
- α -chloroisobutyl ester (ULICH and ADAMS), A., ii, 301.
 - α -glucose ester (HESS, MESSMER, and KIEZTL), A., i, 308.
- Propionic acid**, β -bromo-, esters (MOUREU, MURAT, and TAMPIER), A., i, 495.
- β -bromo-, and β -chloro-, esters of (MOUREU, MURAT, and TAMPIER), A., i, 537.
- Propionitriles**, α - and β -bromo- (MOUREU and BROWN), A., i, 101.
- Propiono- α -bornylamide**, α -bromo- (SHIMOMURA and COHEN), T., 1822.
- cis*-5-Propionoxydiphenanthryridazine-4,5-dihydrate**, 4-hydroxy-, propionate of (SCHÖNBERG and ROSENTHAL), A., i, 810.
- Propionylacetatodiethylenediamine-cobalt salts** (WERNER, SCHWYZER, and KARRER), A., i, 225.
- 1-Propionyl-5-methoxy-2-methylpyrrolidine** (HEFFERICH and DOMMER), A., i, 52.

- 1-Propionyl-5-methyl- Δ^2 -pyrroline** (HELFERICH and DOMMER), A., i, 51.
- dl*-Propionyl-L-tyrosine**, α -bromo-, preparation of, and its ethyl ester (SHIMOMURA and COHEN), T., 1823.
- cis*-5-n-Propoxydiphenanthrapyridazine-4:5-dihydrate**, 4-hydroxy- (SCHÖNBERG and ROSENTHAL), A., i, 810.
- N*-(α -Propoxyethyl)-*m*-nitroaniline**, *N*- β -trichloro- (WHEELER and SMITH), A., i, 411.
- Propyl isonitryl sulphide** (ADAMS, BRAMLET, and TENDICK), A., i, 5.
- iso*Propyl alcohol**, properties of mixtures of water and (LEBO), A., i, 493.
- iso*Propyl alcohol**, α , γ -diamino-, oxalate (BERGMANN, RADT, and BRAND), A., i, 689.
- n*- and *iso*-Propyl alcohols**, diiodo-, physiological action of (MANCINI), A., i, 289.
- iso*Propylamine**, α -thiol-, salts of (BÖSE), A., i, 13.
- N*-Propyl-*o*-aminophenol**, *N*-*p*-chloro-, and its hydrochloride and nitroso-derivative (v. BRAUN and BRAUNSDORF), A., i, 437.
- N*-Propyl-*p*-aminophenol**, *N*-dihydroxy- (KOLSHORN), A., i, 413.
- Propylaniline**, *N*- γ -mono-, and *dl*- γ -hydroxy-, and their salts (v. BRAUN and BRAUNSDORF), A., i, 436.
- Propyl-*o*-anisidine**, γ -hydroxy-, and its salts and derivatives (v. BRAUN and BRAUNSDORF), A., i, 437.
- N*-Propyl-*p*-anisidine**, *N*-dihydroxy- (KOLSHORN), A., i, 413.
- 5-*n*-Propylbenzaldehyde**, 2:4-dihydroxy- (SONN), A., i, 414.
- 9-*p*-*iso*Propylbenzylfluorene**, 2:7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 782.
- 5-*n*-Propylbenzylideneaniline**, 2:4-dihydroxy- (SONN), A., i, 414.
- 9-*p*-*iso*Propylbenzylidenefluorene**, 2:7-dichloro- (SIEGLITZ and SCHATZKES), A., i, 781.
- p*-Propylcarbamido- α -benzoic acid**, β , γ -dibromo-, ethyl ester (THOMS and RITSERT), A., i, 344.
- 1-*n*-Propyl-3:7 dimethyluric acid** (BILTZ and MAX), A., i, 591.
- Propylene**, physical properties of (MAASS and WRIGHT), A., i, 489.
- absorption of, by sulphuric acid (PLANT and SIGGWICK), A., i, 153.
- action of sulphur monochloride on (COFFEY), T., 94.
- Propylene**, γ -amino-, $\alpha\beta$ -dibenzoate, and its salts and derivatives (BERGMANN, BRAND, and DREYER), A., i, 445.
- Propylene**, α (VAN RIJ)
- β , γ -dibromo-, synthesis of acetylenic hydrocarbons from (LESPIEAU), A., i, 490, 656.
- l*-Propylene glycol** from the physicochemical reduction of acetol (FÄRBER, NORD, and NEUBERG), A., i, 150.
- Propyl α -galactoside**, equilibrium of the formation of (BRIDEL), A., ii, 442.
- n*- and *iso*-Propylhexamethylenetetrammonium benzenesulphonates** (HÄHN and WALTER), A., i, 652.
- 1-Propylhydantoin**, and γ -hydroxy- (DAKIN), A., i, 66.
- N*-Propyl-*N*- β -hydroxyethylamine**, *N*- γ -hydroxy-, and its salts (v. BRAUN and BRAUNSDORF), A., i, 436.
- p*-*iso*Propylidenehydrazinobenzoic acid**, ethyl ester (THOMS and RITSERT), A., i, 344.
- iso*Propylidenequinide**, and its derivatives (FISCHER), A., i, 419.
- Propyliminodisulphonic acid**, dihydroxy-, potassium salt (FÄRBER, FABRIKEN VORM. F. BAYER & CO.), A., i, 316.
- Propylindazoles**, and their pierates (v. AUWERS and SCHAICH), A., i, 807.
- n*-Propyl-1:2-naphthiminazole** (FISCHER, DIETRICH, and WEISS), A., i, 58.
- 2-*n*-Propylnaphthylamine**, 1-nitroso-, and its derivatives (FISCHER, DIETRICH, and WEISS), A., i, 58.
- N*-Propyl-*p*-phenetidine**, *N*-dihydroxy- (KOLSHORN), A., i, 413.
- N*-Propylphthalimide**, α -bromo- (BÖSE), A., i, 61.
- Propyl- α -picolinium** mercuri-iodide, crystallography of (PORTER), T., 1773.
- 4-Propylpyridine**, and its salts (KÖRNIS and JÄSCHKE), A., i, 593.
- Propylpyridinium** mercuri-iodide, crystallography of (PORTER), T., 1771.
- Propylpyridinium salts**, amino- (BÖSE), A., i, 60.
- p*-Propylthiocarbamidobenzoic acid**, β , γ -dibromo- (THOMS and RITSERT), A., i, 344.
- n*- and *iso*-Propylthiophenes**, and their acetyl and benzoyl derivatives, and their oximes and hydrazones (SCHEIBLER and SCHMIDT), A., i, 191.
- 2-*n*-Propylthiophen-5-mercuri-salts** (STEINCKOFF), A., i, 632.
- n*-Propylurethane**, *N*- β , γ -dibromo- (BERGMANN, DREYER, and RADT), A., i, 773.
- Proteins**, chemistry of (BLUM and STRAUSS), A., i, 199; (STRAUSS and GRÜTZNER), A., i, 200.

- Proteins**, physical properties of (LOEB), A., i, 136, 367, 627, 693, 822.
colloid chemistry of (LOEB), A., i, 368, 819.
free amino-groups in (EDLRACHER), A., i, 136, 199; (HERZIG), A., i, 199.
removal of, from body fluids (MUKAI), A., ii, 593.
relation of hydrogen-ion concentration to digestion of (NORTHROP), A., i, 137.
hydrolysis of, by treatment with halogens (LO MONACO), A., i, 216.
metabolism of. See Metabolism.
methylation of (HERZIG), A., i, 65.
effect of non-electrolytes, neutral salts, alkaloids, and dyes on the precipitation of (LABES), A., i, 821.
purification of (FIELD), A., i, 366.
pyrrole compounds in (TROENEGGAARD), A., i, 201.
of cow's milk, serum, and colostrum (WOODMAN), A., i, 625.
reactions of (V. SZENT-GYÖRGYI), A., i, 65, 290; ii, 14.
analysis of (MÉNAUL), A., ii, 472.
Bence-Jones, detection of, in urine (MILLER and SWEET), A., ii, 720.
estimation of degradation products of (BACH and SBARSKY), A., ii, 71.
estimation of the phenolic number of (THOMAS), A., ii, 607.
estimation of tryptophan in (THOMAS), A., i, 64; (V. FÜRTH and LIEBEN), A., i, 64, 826, 828; ii, 71.
Protoactinium. See Ekatantalum.
Proton, the term (MASSON), A., ii, 191; (BRIGGS), A., ii, 583.
Protoplasm, effect of neutral salts on the life, permeability, and resistance of (BRENNER), A., i, 209.
Protozoa, nutrition of (PETERS), A., i, 144.
resistance of, to toxic agents (PETERS), A., i, 147.
Pseudophanice cinifera, saponins from the nuts of (VAN DER HAAR), A., i, 877.
Ptomaines, separation of vegetable alkaloids from (IONESCU), A., ii, 226.
Trypsin, action of hydrochloric acid on, in presence of starch (MAESTRINI), A., i, 281, 628.
Pump, mercury vapour, use of (VOLMER), A., ii, 396.
sulphuric acid vacuum (MAASS), A., ii, 104.
water, device for preventing back-flow in (DORSCH), A., ii, 105.
Purpuric acids (PIERZ and BRUTSCH), A., i, 419.
- Pyramidone** (4-dimethylamino-1-phenyl-2,3-dimethyl-5-pyrazolone), compounds of mercury haloids with (OLIVERI-MANDALÀ), A., i, 378.
estimation of (OLIVERI-MANDALÀ and CALDERARO), A., ii, 606.
Pyranhydrones (SCHNEIDER and MEYER), A., i, 680.
Pyrazines (GASTALDI), A., i, 602.
Pyrazolone colouring matters (JOHNSON), A., i, 690.
Pyridine, constitution of (CIAMICIAN and CRUSA), A., i, 329.
hydrates of (PARISELLE), A., i, 354.
methylation of, in the animal organism (TONITA), A., i, 834.
compounds of, with alkali metals (EMMERT and BUCHERT), A., i, 268.
malonato- and oxalato-ferrates (WEINLAND and SIERP), A., i, 538.
additive compounds of (GIUA and GIUA), A., i, 593.
derivatives, crystallography of (PORTER), T., 1769.
Pyridine, 2-amino-, tautomerism of, and its derivatives (TSCHITSCHIBABIN, R. A. and A. KOSOWALOWA), A., i, 450.
4-thiol-, and its salts and its 2:6-dicarboxylic acid, ethyl ester (KOENIGS and KINNE), A., i, 594.
Pyridines, aryl derivatives of (DILTHEY and others), A., i, 735.
Pyridine bases, manufacture of (FARBWERKE FORM. MEISTER, LUCIUS, & BRÜNING), A., i, 52, 354.
Pyridine series, pyro-condensations in (MEYER and HOFMANN-MEYER), A., i, 739.
Pyridine-2:6-dicarboxylic acid, 4-chloro-, ethyl ester (KOENIGS and JAECHKE), A., i, 593.
Pyridine-4-sulphonic acid, and its barium and silver salts (KOENIGS and KINNE), A., i, 594.
4-Pyridone, N-aryl derivatives, constitution of (SMIRNOV), A., i, 594.
1-N-Pyridyl-5-anthraquinoneazobenzoxylamide (GATTERMANN and ROLFFS), A., i, 818.
2-(3'-Pyridyl)-1:3-benzodiazole (BISTRZYCKI and LECCO), A., i, 457.
3:4-o-N-Pyridylbenzoyleneanthranil (GATTERMANN and ROLFFS), A., i, 818.
2-(2'-Pyridyl)quinoline, and its salts (SMIRNOV), A., i, 812.
Pyrimidines (JOHNSON and MIKESKA), A., i, 57.
*spiro*Pyrimidines (DOX and YODER), A., i, 360, 740.

- Pyrochloidal acid** (WIELAND), A., i, 113.
- Pyrodeoxybilianic acids**, and their derivatives (WIELAND and KULEN-KAMPPF), A., i, 112.
- Pyrolithobilianic acid** (WIELAND and WELAND), A., i, 178.
- γ -Pyrrone 2:6-dicarboxylic acid**. See Chelidonic acid.
- Pyronine**, constitution of (KEHRMANN), A., i, 447.
- Pyrophosphates**. See under Phosphorus.
- Pyrophosphoric acid**. See under Phosphorus.
- Pyrrole**, constitution of (CIAMICIAN and CIUSA), A., i, 329.
- effect of, in melaburia (SACCARDI), A., i, 753.
- Pyrrole compounds**, synthesis of, from dihydropyridine derivatives (BENARY), A., i, 127.
- from proteins (TROENSEGAARD), A., i, 201.
- Pyrrole group**, syntheses in the (ODDO), A., i, 129.
- Pyrrroles**, derivatives of (ALESSANDRI and PASSERINI), A., i, 592.
- Pyrrrole 2:5-diacetic acid**, ethyl ester (WILLSTÄTTER and BOMMER), A., i, 122.
- Pyrrylacetic acid**, amide and ethyl ester semicarbazone (ODDO), A., i, 130.
- 2-(2'-Pyrryl)quinoline**, and its salts (SMIRNOV), A., i, 813.
- Pyruvic acid**, decomposition of, by moulds (NAGAYAMA), A., i, 836.
- methylamylide (ADAMS, BRAMLET, and TENDICK), A., i, 6.
- Pyruvic acid *p*-aminophenylhydrazone** (FRANZEN and STEINFÜHRER), A., i, 463.
- Pyrylium compounds** (DILTHEY, BAURIEDEL, GEISELBRECHT, SEEGER, and WINKLER), A., i, 188; (DILTHEY and BLOSS), A., i, 190; (DILTHEY and BURGER), A., i, 429.
- Pyrylium salts**, constitution of (KEHRMANN), A., i, 447.
- Q.**
- Quantum theory** in relation to the theory of corresponding states (BYR), A., ii, 163.
- and velocity constants (TRAUTZ), A., ii, 180.
- Quantum weight**, dynamic, influence of, on vapour pressure and reaction equilibria (SCHOTTKY), A., ii, 179.
- Quartz**, structure of (MAUGUIN), A., ii, 681.
- change of, into tridymite (REUFFAT), A., ii, 44.
- physiological effect of inhalation of particles of (FENN), A., i, 640.
- Quercitrin**, distinction between marin and (JUSTIN-MUELLER), A., ii, 69.
- Quercitron**, extract of. See Quercitrin.
- Quercus agrifolia*, analysis of wood of (DORE), A., i, 87.
- Quinaldine**. See 2-Methylquinoline.
- Quinan**. See Methylcuprean.
- Quinotoxins**, aliphatic (RUZICKA and SEIDEL), A., i, 585.
- Quinhydrone**, hydrogenation of (BILLMANN), A., ii, 372.
- Quinic acid** in the leaves of *Conifera* (TANRET), A., i, 295.
- derivatives of (FISCHER), A., i, 413.
- Quinide** (FISCHER and ANGER), A., i, 419.
- Quinine**, estimation of, in blood, nephelometrically (ACTON and KING), A., i, 474.
- Quinine series**, syntheses in the (RUZICKA), A., i, 584; (RUZICKA and SEIDEL), A., i, 585.
- Quinocyanines** (FISCHER and SCHERER), A., i, 56.
- Quinol**, alkyl derivatives of (MAUTHNER), A., i, 726.
- detection of, colorimetrically (BESSENOFF), A., ii, 608.
- Quinol**, amino-, and its hydrochloride (HENRICH and ROEDEL), A., i, 888.
- Quinol-5-hydrindenesulphone** (BOESCH and POMMER), A., i, 169.
- Quinoline**, additive compounds of (GITA and GITA), A., i, 593.
- malonato- and oxalato-ferriates (WEINLAND and SIERP), A., i, 538.
- Quinoline**, 2- and 4-amino-, action of methylodiodeon (TSCHITSCHIBASCH), A., i, 451.
- 8-hydroxy-. See "Chinosol."
- 3-nitro-, and its 4-carboxylic acid (BADISCHE ANILIN- & SODA-FABRIK), A., i, 517.
- iso*Quinoline alkaloids, structural formulae of (HACKH), A., i, 820.
- Quinoline compounds**, hydrogenated, physical and physiological properties of (SHIMOMURA and COHEN), T., 740.
- Quinoline series**, preparation of alcohols and amino-alcohols of the (VERKINSTE CHININFABRIKEN ZIMMER & CIE), A., i, 355.

- Quinoline-4-carboxylic acid**, ethyl ester, condensation of ethyl *N*-benzoylhomocincholeuponate with (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 360.
- Quinoline-red**, synthesis of (SCHEER and ROSSNER), A., i, 451.
- 4-Quinolyi ϵ -aminoamyl ketone**, and its salts (RUZICKA and SEIDEL), A., i, 586.
- 4-Quinolyi δ -ethylaminobutyl ketone**, and its salts (RUZICKA and SEIDEL), A., i, 586.
- 4-Quinolyi δ -ethylbromoaminobutyl ketone dihydrobromide** (RUZICKA and SEIDEL), A., i, 586.
- 4-Quinolyi 3-*N*-ethyl-2-piperidonyl ketone**, and its picrate (RUZICKA and SEIDEL), A., i, 586.
- Quinoly ketones**, preparation of (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 360.
- 4-Quinolyi δ -methylaminobutyl ketone**, and its salts (RUZICKA and SEIDEL), A., i, 586.
- γ -Quinolyi δ -methylbromoaminobutyl ketone dihydrobromide** (RUZICKA and SEIDEL), A., i, 586.
- γ -Quinolyi 2-*N*-methylpyrrolidyl ketone**, and its hydrochloride (RUZICKA and SEIDEL), A., i, 586.
- Quinomolybdic acid**, ammonium salt (TANRET), A., i, 674.
- Quinones**, condensation of, 2:4:6-trinitrophenylhydrazine with (BORSCH), A., i, 624.
- o*-Quinones** (SCHÖNBERG), A., i, 272; (SCHÖNBERG and NEDZATI), A., i, 275; (SCHÖNBERG and ROSENTHAL), A., i, 303.
- action of *o*-aminothiophenol on (STAHRFOSS), A., i, 457, 794.
- condensation of ketazines with (GERHARDT), A., i, 746.
- 4-Quinonyl ϵ -methylaminoamyl ketone**, and its salts (RUZICKA and SEIDEL), A., i, 587.
- 4-Quinonyl 3-*N*-methyl-2-piperidonyl ketone**, and its picrate (RUZICKA and SEIDEL), A., i, 586.
- R.**
- Rabbits**, immunity of, to atropine (VAN DER HEYDE), A., i, 478.
- variation in zinc content of the body of, during growth (BERTRAND and VLADESCO), A., i, 907.
- Racemic acids**, resolution of, by means of optically active alcohols (WREN and WRIGHT), T., 798.
- Racemic compounds**, active (DELEPINE), A., ii, 567.
- in animal and plant organisms (FÄRBER, NORD, and NEUBERG), A., i, 150.
- Radiation**, scattering of, and atomic structure (GLOCKER and KAUPP), A., ii, 323.
- distinction between ionisation and (COMPTON and OLMSTEAD), A., ii, 368.
- temperature of, of elements (SAHA), A., ii, 162.
- Radiation hypothesis** applied to chemical reactions (COX), T., 142; (LANGMUIR), A., ii, 31.
- Radioactive constants** in 1920 (MEYER), A., ii, 285.
- disintegration (MEITNER), A., ii, 293.
- elements, existence of helium nuclei in (BRÜSSLER), A., ii, 366.
- and their disintegration products, nomenclature of (NEUBERGER), A., ii, 676.
- quantity, new, name for (DORSAY), A., ii, 675.
- substances, transformation of (HAHN and MEITNER), A., ii, 148.
- accumulation of, in deposits from iron springs (HENNICH), A., ii, 617.
- Radioactivity**, atomic structure, and the periodic system (URBACH), A., ii, 251.
- of water. See under Water.
- Radium**, extraction of, from earths (EHLER and VAN RHYN), A., ii, 616.
- isotopism of, with mesothorium, and their separation from barium (STRONG), A., ii, 294.
- degradation of γ -rays from (COMPTON), A., ii, 366.
- emanation. See Niton.
- rays, effect of, on glass (CLARKE), A., ii, 569.
- Radium-B**, magnetic spectrum of β -rays excited by γ -rays of (ELLIS), A., ii, 422.
- Radium-C**, branching relationship and disintegration of (ALBRECHT), A., ii, 675.
- range and ionisation of α -particles from (HENDERSON), A., ii, 617.
- Raffinose**, analysis of mixtures of sucrose and, by the optical method (BROWNE and GAMELE), A., ii, 661.
- Rana fusca* (brown frog), composition of the eggs of (TERBOINE and BARTHÉLÉMY), A., i, 906.
- Rape oil**, preparation of petrol from (MILHE), A., i, 841.

- Raphanidin** (SCHUDEL), A., i, 486.
- Raphanin**, and its hydrochloride (SCHUDEL), A., i, 486.
- Raphanus sativus**, anthocyanins of (SCHUDEL), A., i, 485.
- Rats**, albino, relation of plant carotinoids to growth of (PALMER and KENNEDY), A., i, 526.
- Rays**, anode, use of, in the investigation of isotopes (THOMSON), A., ii, 675.
- canal, decomposition of hydrocarbons by (KOHLSCHÜTTER and FRUMKIN), A., i, 405.
- cathode slow, absorption of, by gases (MAYER), A., ii, 234.
- infra-red, action of, on phosphorescence (CURIE), A., ii, 233, 616.
- Röntgen, from arcs in gases and vapours (MOHLER and FOOTE), A., ii, 570.
- reflection of, by rock salt (BRAGO, JAMES, and BOSANQUET), A., ii, 477.
- diffraction of, by liquids (DEBIERNE), A., ii, 531.
- scattering and absorption of (AURÉN), A., ii, 367.
- mass absorption and mass scattering coefficients of (HEWLETT), A., ii, 674.
- determination of crystal structure by means of (v. LAUE), A., ii, 626; (WYCKOFF), A., ii, 674.
- patterns obtained by the passage of, through crystals (JAEGER), A., ii, 234.
- action of, on cellulose (HERZOG and JANCKE), A., i, 303.
- action of, on chloroform solutions of iodoform (BAUMEISTER and GLOCKER), A., ii, 367.
- Röntgen and ultra-violet, effect of, on glass (CLARKE), A., ii, 569.
- sensitive, of elements (DE GRAMONT), A., ii, 73.
- α -Rays**, ionisation of gases by (HESS and HORNYAK), A., ii, 292.
- range of, in solids (v. TRAUBENBERG), A., ii, 148.
- α - and β -Rays**, transformation of substances emitting both (HAHN and MEITNER), A., ii, 148.
- β -Rays**, magnetic spectrum of, excited by γ -rays (ELLS), A., ii, 422.
- emission of, from films of elements exposed to X-rays (SIMONS), A., ii, 77.
- γ -Rays** (CROWTHER), A., ii, 673.
- Reactivity**, influence of constitution on (GUPTA), T., 293.
- molecular phase theory of (BALY), A., ii, 73.
- Rectification** (GAY), A., ii, 85.
- Refraction of hydrocarbons**, dispersion of (DARMOIS), A., ii, 1.
- of non-associated liquids (HEERZ), A., ii, 529.
- molecular (EISENLOHR), A., ii, 1, 223; (v. STEIGER), A., ii, 473.
- theory of (LEBAS), A., ii, 361, 529.
- specific, of dissolved salts (CHENEVEAU), A., ii, 421.
- Refractive index of aromatic hydrocarbons** (EISENLOHR), A., ii, 1.
- of colloidal solutions (WINTGEN), A., ii, 137.
- Refractometer**, immersion, analysis of salt solutions by means of (CLEMENS), A., ii, 650.
- Relativity**, theory of, in relation to Bohr's atomic model (FÖRSTERLING), A., ii, 189.
- Rennin**, action of (HAMMARSTEN), A., i, 138.
- Reproduction in vertebrate animals**, influence of zinc salts on (BEETRAND and VLADESCO), A., i, 699.
- Resins**, constituents of (ZINKE, FRIEDRICH, and ROLLETT), A., i, 39; (ZINKE and DZIRMAL), A., i, 187.
- iodine values of (MACLEAN and THOMAS), A., i, 535.
- new, solubility of (NICOLARDOT and COFFIGNIER), A., i, 875.
- Resin acids of colophony** (GRÜS), A., i, 344.
- Resin soaps**, liquid crystals of (PATI), A., i, 427.
- Resinification**, relation between chemical constitution and (HERZOG), A., i, 518.
- Resistance**, a variable (MAASS and WRIGHT), A., ii, 424.
- Resobutyrophenone**, and its hemihydrate (KARRER and ROSENFELD), A., i, 793.
- Reso/sohexophenone** (KARRER and ROSENFELD), A., i, 793.
- Resonance potentials** (MOHLER and FOOTE), A., ii, 368.
- of metals (MOHLER, FOOTE, and MEGGERS), A., ii, 8.
- Reso-octophenone**, and its hemihydrate (KARRER and ROSENFELD), A., i, 793.
- Reso-cenanthophenone**, and its hemihydrate (KARRER and ROSENFELD), A., i, 793.
- Resorcinol**, tautomerism of (HARRIZO and ZEISEL), A., i, 663.
- bisulphite compounds of (FUCHS), A., i, 241.
- preparation of alkyl derivatives of (JOHNSON and LANE), A., i, 340; (MAUTNER), A., i, 726.
- condensation of carbonyl compounds with (v. EULER), A., i, 563.

Resorcinol, action of cyanogen and hydrogen chloride on (KARKER and FERLA), A., i, 341.
Resorcinol, 2:4:6-trinitro-. See Styphnic acid.
Resorcinolcoumारेin, and *tetrabromo-* (KRISHNA), T., 1424.
Resoreylglyoxylic acid, ammonium and silver salts (KARKER and FERLA), A., i, 342.
Respiration (BROOKS), A., i, 385; (INMAN), A., i, 386.
 of living cells (LIPSCHITZ), A., i, 203.
 in relation to physical exertion and fitness (BRIGGS), A., i, 141.
 effect of carbon monoxide asphyxia on (HAGGARD and HENDERSON), A., i, 752.
 anaerobic, in molluscs (BERKELEY), A., i, 524.
 of plants. See Plants.
Retene (VIRTANEN), A., i, 671.
Retropinacolic transpositions (LÉVY), A., i, 233.
Rhamnal, and its triacetate (BERGMANN and SCHOTTE), A., i, 307.
Rhamnose, preparation of (WALTON), A., i, 219.
 acetates (FISCHER, BERGMANN, and RABE), A., i, 95.
Rhamnosides, synthesis of (FISCHER, BERGMANN, and RABE), A., i, 94.
Rhaponticin, and its derivatives (HOLMSTRÖM), A., i, 704.
Rhapontigenin, and its derivatives (HOLMSTRÖM), A., i, 704.
Rheum emodi, constituents of the roots of (HOLMSTRÖM), A., i, 704.
Rhizostoma euvieri, fats of the gonads of (HAUROWITZ), A., i, 206.
Rhodacene (DZIEWOŃSKI, PODGÓRSKA, LEMBERGER, and SUSZKA), A., i, 105.
Rhus diversiloba, lobinol from (McNAIR), A., i, 387.
d-**Ribohexosamic acids**, and their derivatives (LEVENE and CLARK), A., i, 318.
Rickets, experimental (HESS, McCANN, and PAPPENHEIMER; McCOLLUM, SIMMONDS, SHIPLEY, and PARK), A., i, 757.
Ricin, agglutination by (GUNN), A., i, 284.
Ricinoleic acids, structure of (STOSIUS and WIESLER), A., i, 7.
Ringer's solution, effect of replacement of chlorides in, on the frog's heart (FINCKH), A., i, 830.
Ring formation, in colour reactions (REISS), A., ii, 124.
Rock salt, reflection of Röntgen rays by (BRAGG, JAMES, and BOSANQUET), A., ii, 477.

Rotation, optical. See Optical.
 specific, of mixed liquids (DEUTSCHMANN), A., ii, 146.
 spectra. See Spectra.
Rotatory power and chemical constitution (BETTI and CAPACCIOLI; BERLINGOZZI), A., i, 107.
 measurement of, in crystals (LONG-CHAMRON), A., ii, 421, 531.
Rubidium, induction spectrum of (DUNOYER), A., ii, 610.
Rubidium selenodithionate (MORGAN and SMITH), T., 1068.
 sulphites (MORGAN and SMITH), T., 1069.
Rubidium organic compounds:—
 cyanides (MEYER), A., i, 501.
Rubilinic acid, *hexachloro-* (KÜSTER), A., i, 526.
Rumex crispus. See Gishi-gishi.
Rumppii, analysis of (TSCHERMAK), A., ii, 121.
Ruscus aculeatus, anthocyanidins in the fruit of (JONESCO), A., i, 760.
Rutæcarpine, and its derivatives (ASHINA and MAYEDA), A., i, 48.
Ruthenium compounds, stereochemistry of (WERNER and SMIRNOV), A., i, 13.
 bivalent (REMY), A., ii, 209.
Ruthenium tetroxide, action of hydrochloric acid on (REMY), A., ii, 267.
Ruthenichlorides (KRAUSS), A., ii, 514.
Rutheno-bromides and -chlorides (GUTHRIE, FALCO, and VOGT), A., ii, 457.
Ruthenates, *penta-bromo-* and *chloro-*. See Rutheno-bromides and -chlorides.
Rutherford, a new radioactive unit (DORSEY), A., ii, 675.
Rye, amylase of (BAKER and HULTON), T., 805.

S.

Saccharase, preparation of active (SVANBERG), A., i, 202; (v. EULER and SVANBERG), A., ii, 522.
 action of ultra-violet light and oxidising agents on (SVANBERG), A., i, 628.
 action of copper and silver salts on (v. EULER and SVANBERG), A., i, 202.
 inactivation of, by organic substances (v. EULER and SVANBERG), A., i, 68.
Saccharic acid, oxidation of, and its semiamide (BERGMANN and WOLFF), A., i, 542.

- "**Saccharin**" (*o*-benzotoluenesulphinide), sweetening power of (PAUL), A., i, 109.
detection of (THEVENON), A., ii, 69, 357.
- "**Saccharin**" substances, artificial (HOLLEMAN), A., i, 552.
- C₆-Saccharinic acids** (GLATTFIELD and MILLER), A., i, 7.
- apoSafranin**, and its isomerides and derivatives, absorption spectra of (KZHRMANN and SANDOZ), A., i, 277.
- isoSafrrole**, and bromo-, isomerism of (NAGAI), A., i, 857.
- "**Salbrantia**," behaviour of, in the organism (FILIPPI), A., i, 146.
- Salicinase**, effect of heat on the activity of (BERTRAND and COMPTON), A., i, 282.
- Salicylic acid**, action of phosphorus pentoxide on (LANGER), A., i, 345.
and its derivatives, fate of, in the organism (DEVRIENT), A., i, 909.
theobromine sodium salt, analysis of (BENNETT and WINDLE), A., ii, 527.
and its salts, in blood (HANZLIK), A., i, 698.
transformations of, in the animal organism (ANGELICO), A., i, 701.
detection and estimation of, in wines (FRESENIUS and GRÜNHUT), A., ii, 602.
estimation of, bromometrically (KOLT-HOFF), A., ii, 466.
esters, estimation of (EMERY), A., ii, 603.
- Salicylic acid**, 3:5-diiodo-, preparation of, and its solubility in water (COFFMAN), A., i, 177.
- 3:5-dinitro-, as a reagent for estimation of sugar (SUMNER and GRAHAM), A., ii, 564.
- 5-nitroso-, and its esters (HOUBEN and SCHREIBER), A., i, 109.
- Salicylidene-p-aminobenzene** (GALLAGHER), A., i, 715.
- Salicylidene-p-aminobenzaldehyde** (GALLAGHER), A., i, 715.
- Salicylidene-o-aminocinnamic acid** (GALLAGHER), A., i, 715.
- Salicylideneanisylidene-o-phenylenediamine** (GALLAGHER), A., i, 715.
- Salicylidene- α -chloro- β -naphthylamine** (GALLAGHER), A., i, 715.
- Salicylidene-m-methoxysalicylidene-o-phenylenediamine** (GALLAGHER), A., i, 716.
- Salicylidene-1:2-naphthalenediamine** (GALLAGHER), A., i, 715.
- Salicylidene-nitro- ψ -cumidine** (GALLAGHER), A., i, 715.
- Salicylidene-nitrotoluidines** (GALLAGHER), A., i, 715.
- Salicylidene-p-phenetidine** (GALLAGHER), A., i, 715.
- Salicylidene-o-phenylenediamine** (GALLAGHER), A., i, 715.
- Salicylidenepiperonylidene-o-phenylene diamine** (GALLAGHER), A., i, 716.
- Salol-red** (LANGER), A., i, 345.
- Salts**, reciprocal solubility of, in solution (RAYEAU), A., ii, 386.
purification of, by fractional crystallisation (RAYEAU), A., ii, 31, 386, 682.
slow hydrolysis of (TIAN), A., ii, 422.
binary, solution and ionisation of, by non-aqueous solvents (WALDEN), A., ii, 309.
molecular association of, in non-aqueous solutions (WALDEN), A., ii, 22.
fused, and the law of corresponding states (LORENZ and HERZ), A., ii, 486.
having a common ion, separation of (SCHLESING), A., ii, 31.
- Salt hydrates**, vapour pressure of (WILSON), A., ii, 376; (NOYES and WESTBROOK), A., ii, 377.
- Salt solutions**, aqueous, analysis of, by means of the immersion refractometer (CLEMENS), A., ii, 650.
- Salt water**. See under Water.
- Salvarsan** (*phenarsamine*), preparation of (CHRISTIANSEN), A., i, 70, 370.
commercial, sulphur derivatives in (KING), T., 1107, 1415.
action of mercuric chloride on (BINZ and BAUER), A., i, 629.
estimation of arsenic in (KIRCHER and v. RUPPERT), A., ii, 130.
- Samarium**, absorption spectrum of (PRANDTL), A., ii, 475.
luminescence of (HOWES), A., ii, 393.
- Santonin** in *Artemisia brevifolia* (GREENISH and PEARSON), A., i, 211.
estimation of, in wormseeds (KANEYONE and KIMURA), A., ii, 223.
- Saponification**, time factor in (FAYAT), A., ii, 319.
- Saponin** as a protective colloid (GUTHRIE HUBER, and HAUG), A., ii, 537, 538.
action of, on plant cells (BOAS), A., i, 294.
effect of, on respiration (BROOKS), A., i, 385.
- Saponins** (VAN DER HAAR), A., i, 877.
- Sarcocollatic acid**. See *d*-lactic acid.
- Sarcopside** from New Hampshire (HOLDEN), A., ii, 289.

- sardine**, California. See *Sardinia*.
- Sardinia corulea*, fat content of (DILL), A., i, 834.
- Scapolite** (SHANNON), A., ii, 459.
- Scatole-2-carboxyacetylamine** (KERMACK, PERKIN, and ROBINSON), T., 1635.
- Scatole-2-carboxylic acid** (KERMACK, PERKIN, and ROBINSON), T., 1634.
- Scopoline and its derivatives** (GADAMER and HAMMER), A., i, 588.
- degradation of (HESS), A., i, 683.
- See **water**. See under **Water**.
- Seedlings**, function of calcium salts in the nutrition of (TRUE), A., i, 837.
- Seeds**, resting, hemicellulases in (RIFFEL), A., i, 912.
- Selenium**, conductivity of (PÉLABON), A., ii, 533.
- variation of the resistance of, with temperature (DATTA), A., ii, 570.
- action of light on the thermal conductivity of (NANNEI), A., ii, 162.
- colloidal (GUTBIER and EMSLANDER), A., ii, 636.
- effect of freezing on (GUTBIER, FLURY, and HEINRICH), A., ii, 693.
- sols, flocculation of (KRUYT and VAN ARKEL), A., ii, 25, 312.
- replacement of halogens by (ROSENMUND and HARMS), A., i, 104.
- in animal and plant organisms, (FRITSCH), A., i, 206.
- Selenium alloys** with antimony, electromotive force of (KREMANN and WITTEK), A., ii, 342.
- with bismuth (TOMOSHIGE), A., ii, 207.
- Selenium monochloride**, action of ethylene on (HEATH and SEMON), A., i, 6.
- oxychloride, preparation of (LENHER), A., ii, 109, 256.
- dielectric constant of (WILDISH), A., ii, 78.
- Selenic acid**, preparation of (MEYER and MOLDENHAUER), A., ii, 503.
- Selenium organic compounds**—
- with sugars (WREDE), A., i, 161.
- acetylacetone, and its derivatives (MORGAN and DREW), T., 610.
- Selenium detection**—
- detection of, in plant and animal organisms (GASSMANN), A., i, 78.
- Selenocarbamides** (SCHMIDT), A., i, 775.
- Selenoethylhydrocupreine** (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 287.
- Selenodithionic acid**, and its metallic salts (MORGAN and SMITH), T., 1066.
- Selenohydrocupreine** (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 267.
- Selenohydroquinine** (VEREINIGTE CHININFABRIKEN ZIMMER & CIE), A., i, 267.
- Semicarbazide**, action of, on 1:4-diketones (BLAISE), A., i, 193.
- Separator**, automatic (HULTMAN, DAVIS, and CLARKE), A., ii, 325.
- Serecin**, estimation of the constituents of (TÜRK), A., i, 137.
- Serum**, opacity of (HOLKER), A., i, 633.
- dialysis of chlorine against (MESTREZAT and LEDEBT), A., i, 634.
- immune, action of, on amoebæ (v. SCHUCKMANN), A., i, 204.
- tryptophan content of proteins of (v. FÜRTH and LIEBEN), A., i, 828.
- of sucklings, chlorides in (SCHEER), A., i, 905.
- estimation of calcium and magnesium in (KRAMER and TISDALL), A., ii, 595.
- estimation of phosphoric acid in (WIENER), A., ii, 347.
- estimation of potassium in (KRAMER and TISDALL), A., ii, 412.
- Serum albumin**. See under **Albumin**.
- Sesquiterpene alcohol**, $C_{15}H_{26}O$, from aburachan (SHINOSAKI), A., i, 679.
- Sesquiterpenes** (RUZICKA and MEYER), A., i, 573; (TAKAGI), A., i, 732.
- Shale oil**, Swedish, composition of (HELLSING), A., i, 549.
- Shé-Chuang-tzu**, the Chinese drug, origin of (NAKAO), A., i, 87.
- Shepherd's purse**. See *Capsella bursa pastoris*.
- d*-**Sialaresinic acid**, and its potassium salt (REINITZER), A., i, 351.
- Silage crops**, analysis of (NEIDIG and SNYDER), A., i, 488.
- Silical** (KAUTSKY), A., ii, 505.
- Silica**. See **Silicon dioxide**.
- Silicates**. See under **Silicon**.
- Silicatotetramminecobalt salts**. See under **Cobalt**.
- Silicoethane**, derivatives of (KIPPING), T., 647.
- Silicohydrocarbons** (KIPPING and SANDS), T., 630.
- Silicon**, spectra of, in salts and steel (DE GRAMONT), A., ii, 474.
- reaction of carbon with (TAMMANN), A., ii, 451.
- Silicon alloys** with iron (MURAKAMI), A., ii, 589.
- Silicon compounds**, unsaturated (KAUTSKY), A., ii, 505.
- Silicon hydrides** (STOCK and SOMIESKI), A., ii, 330, 399.

- Silicon dioxide (silica)**, equilibrium of the glass and crystal forms of (WIETZEL), A., ii, 504.
- vapour pressure of (RUFF and SCHMIDT), A., ii, 436.
- absorption of gases by (MILLER), A., ii, 169; (BRIGGS), A., ii, 624.
- estimation of (WILLARD and CAKE), A., ii, 60; (SCHOLES), A., ii, 132; (TRAVERS), A., ii, 710.
- Silicic acid** (LENHER), A., ii, 331.
- solubility of, in ammonia (SCHWARZ), A., ii, 260.
- formation of complex compounds containing (SCHWARZ and BAUSCH), A., ii, 404.
- excretion of, in urine (ZUCKMAYER), A., i, 288.
- estimation of, in concretions in animal organs (GONNERMANN), A., i, 79.
- Silicates**, chemical constitution of (GOSSNER), A., ii, 649.
- basic exchange in (RAMANN and JUNK), A., ii, 202.
- fused, molecular condition of (BOEKE), A., ii, 111.
- estimation of iron in, colorimetrically (MATEJKA), A., ii, 658.
- estimation of potassium in (MORGAN), A., ii, 349.
- Silicon organic compounds** (KIPPING), T., 647; (KIPPING and SANDS), T., 830, 848.
- Silicon estimation and separation**:—
- estimation of, in cast iron (GARFIA), A., ii, 348.
- separation of, from tin, titanium, and zirconium (WENGER and MOREL), A., ii, 464.
- Silicotungstic acid**, reactions of alkalis with (HEIDUSCHKA and WOLFF), A., ii, 469.
- Silk**, Tussur, chemical constitution of (ISOUYE, IWAKA, and HIRASAWA), A., i, 67.
- Silkworms**, physeology of (JAMESON and ATKINS), A., i, 638.
- blood of. See Blood.
- digestive enzymes of (KAWASE, SUDA, and SAITÔ), A., i, 331.
- Silkworm moth**, composition of the eggshells of (TOMITA), A., i, 830.
- Sillimanite**, analysis of (SHANNON), A., ii, 458.
- Silver**, oligodynamy of (DOERRE), A., i, 209.
- adsorption of, in analysis (KOLTHOFF), A., ii, 277.
- Silver**, diffusion velocity of gold into (FRAENKEL and HOUTEN), A., ii, 491.
- mixed crystals of gold and (TAMMANN), A., ii, 173.
- colloidal, colour and optical properties of sols of (SCHAUM and LANG), A., ii, 506.
- particles, colour and Brownian movement of (FÜRTH), A., ii, 243.
- action of dilute sulphuric acid on (SALKOWSKI), A., ii, 586.
- action of solutions of persulphates on (HIGSON), T., 2048.
- Silver alloys** with cadmium, electromotive force of (KREMANN and RUDERER), A., ii, 11.
- with palladium, activity of (NOWACK), A., ii, 203.
- Silver salts**, action of light on metallic oxides in solutions of (TAMMANN), A., ii, 147.
- action of alkaline hydrogen peroxide on solutions of (SALKOWSKI), A., ii, 586.
- action of $\beta\beta'$ -dihydroxydiethyl sulphide on (MOUREU and MURAT), A., i, 90.
- toxicity of, towards saccharase (v. EULER and SVANBERG), A., i, 202.
- Silver bromide**, action of light on (EHLERS and KOCH), A., ii, 289; (SCHWARZ and STOCK), A., ii, 614.
- action of ammonia on sols of (ACEBACH), A., ii, 312.
- carbonate, compound of ammonia and (DERVIN and OLMER), A., ii, 507.
- perchlorate, distribution of, between water and benzene (HILL), A., ii, 261.
- haloids, crystal structure of (WILSEY), A., ii, 548.
- colloidal, adsorption of lead isotopes by (FAJANS and v. BECKERATH), A., ii, 386.
- compounds of ammonia with (BLIZZ and STOLLENWERK), A., ii, 201.
- iodide, heat of formation of (GERTH), A., ii, 534.
- nitrate, reaction between ferrous ammonium sulphate and (DHAR, DATTA, and BHATTACHARYA), A., ii, 36.
- peroxide, detection of (SALKOWSKI), A., ii, 586.
- sulphide, electrical conductivity of and its mixtures with silver (TUBANDT, EGGERT, and SCHIEBER-TUBANDT and EGGERT), A., ii, 480.

- silver sulphide**, coagulation of hydrosols of (V. HAHN), A., ii, 46.
 equilibrium of, with antimony sulphide (KONNO), A., ii, 206.
 equilibrium of thallium sulphide and (HUBER), A., ii, 507.
 sodium thiosulphate, reduction of, by hyposulphites (STEIGMANN), A., ii, 46, 147.
- Silver organic compounds**:—
 bismuthobromocyanide (VOURNAZOS), A., i, 232.
- Silver estimation and separation**:—
 estimation of, electrometrically (HENDRIXSON), A., ii, 411.
 estimation of, in alloys (SAUERLAND), A., ii, 595.
 estimation of, and its separation from lead (MOSER and KIITL), A., ii, 521.
- Silver cathodes**. See Cathodes.
- Sinapic acid**, β -dimethylaminoethyl ester (SPÄTH), A., i, 30.
- Sinapin**, synthesis of (SPÄTH), A., i, 28.
- Sinomenine**, and its salts (ISHIWARI), A., i, 354.
- Sinomenium diversifolius***, alkaloid from (ISHIWARI), A., i, 354.
- Sirynpus Iodeti ferrosi**, analysis of (KOLTHOFF), A., ii, 57.
- Skimmia laurole***, oil from (SIMONSEN), A., i, 515; (ROURE-BERTRAND FILS), A., i, 798.
- Skin**, extraction of melanin from (YOUNG), A., i, 467.
 calcium in blood in diseases of (THRO and EHN), A., i, 908.
- Smalt**, constitution of (DUBOIS), A., ii, 403.
- Smell**, mechanism of the sense of (TSCHIRCH), A., i, 755.
- Smelting**, theory of (GUERTLER and MEISSNER), A., ii, 402, 589, 640.
- Soaps**, ultramicroscopic structure of (DARKE, MCBAIN, and SALMON), A., ii, 312.
 use of, as protective colloids for colloidal gold (TREDALE), T., 625.
- Soap curd**, hydration of the fibres of (MCBAIN and MARTIN), T., 1369; (MCBAIN and SALMON), T., 1374; (LAINE), T., 1668.
- Soap solutions**, interfacial and surface tensions of (REYNOLDS), T., 473.
 surface tension and emulsifying power of (WHITE and MARDEN), A., ii, 88.
- Sobrerol** dichloride (HENDERSON and MARSH), T., 1496.
- Sodamide**, preparation and properties of (MCGEE), A., ii, 334.
- Sodium**, arc and spark spectra of (SEELIGER and THAER), A., ii, 566.
- Sodium**, vacuum arc spectrum of (DATT), A., ii, 285.
 vapour, electrodeless discharge in (ROBERTSON), A., ii, 668.
 specific heat of, at low temperatures (GÜNTHER), A., ii, 16.
 action of, on phenyl acetate (PERKIN), T., 1234.
 compounds of pyridine with (EMMERT and BUCHERT), A., i, 268.
- Sodium alloys** with antimony, electromotive properties of (KREMMANN and PRESZREUND), A., ii, 332.
 with bismuth, electromotive force of (KREMMANN, FRITSCH, and LIEBL), A., ii, 312.
 with mercury, action of carbon tetrachloride on (FETKENHEUER), A., ii, 547.
 with potassium, emission of electrons from (RICHARDSON), A., ii, 422.
 with tin, electromotive properties of (KREMMANN and GMACHL-PARMER), A., ii, 158.
- Sodium salts**, distribution of, in plant and animal cells (FUNKOJA), A., i, 907.
- Sodium arsenate**, estimation of (CORFIELD and WOODWARD), A., ii, 519.
 arsenite, action of, on thiocyanocompounds (GETMANN), A., i, 553.
 borate, equilibrium of the preparation of (SBOGI and FRANCO), A., ii, 580.
 perborate (FOERSTER), A., ii, 506.
 velocity of decomposition and catalysis of (SBOGI and NOCENTINI), A., ii, 499.
 bromate, crystal structure of (KOLKMEIJER, BUIVOET, and KARSSEN), A., ii, 200.
 carbonate, alteration of, in air (DUBOVITZ), A., ii, 639.
 action of, on solutions of chrome alum (MEUNIER and CASTE), A., ii, 512.
 carbonates, reactions of calcium phosphate with (PINNOW), A., ii, 560.
 tri- and per-thiocarbonates (YEOMAN), T., 40.
 chlorate, crystal structure of (KOLKMEIJER, BUIVOET, and KARSSEN), A., ii, 200.
 growth and dissolution of crystals of (POPPE), A., ii, 90.
 chloride, heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.
 growth and dissolution of crystals of (POPPE), A., ii, 90.
 solubility of ethyl ether in solutions of (THORNE), T., 262.

Sodium chloride, equilibrium of, with barium and potassium chlorides (JÄNECKE; VORTISCH), A., ii, 95, 96.
 equilibrium of, with calcium, magnesium, potassium, and strontium chlorides (SCHOLICH), A., ii, 97.
 equilibrium of, with lithium and potassium chlorides (SCHAEFER), A., ii, 96.
 equilibrium of magnesium sulphate and (TAKEGAMI), A., ii, 30.
 cuprite (MÜLLER and ERNST), A., ii, 552.
 ferrate and ferrite, electrolytic preparation of (GRUBE and GMELIN), A., ii, 49.
 hydroxide, preparation of (NEUMANN and KARWAT), A., ii, 333.
 preparation of solutions of, free from carbonate (KOLTHOFF), A., ii, 705.
 heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.
 fused, properties of (WALLACE and FLECK), T., 1839.
 hypobromite, decomposition of, in presence of copper sulphate (FLEURY), A., ii, 70.
 hyposulphite, estimation of (SMITH), A., ii, 652; (HELWIG), A., ii, 653.
 iodide, velocity of reaction of hydrogen peroxide with (BOHNSSEN), A., ii, 185.
 permanganate, electrolytic preparation of (HENKE and BROWN), A., ii, 115.
 preparation of, from ferromanganese (WILSON, HORSCH, and YOUTZ), A., ii, 643.
 nitrate, heat of dilution and specific heat of (RICHARDS and ROWE), A., ii, 380.
 equilibrium of ammonium chloride, water and (RENGADE), A., ii, 93.
 nitrite, electrolysis of solutions of (JEFFERY), A., i, 374.
 standardisation of, with *p*-nitro-aniline (BELL), A., ii, 216.
 peroxide, apparatus for fusion with (HODSMAN), A., ii, 345.
Disodium hydrogen phosphate, action of epichlorohydrin on, in aqueous solution (BAILLY), A., i, 299, 493.
Sodium iron pyrophosphate (OLIVERI-MANDALÀ), A., ii, 338.
 selenodithionate tetrahydrate (MORGAN and SMITH), T., 1067.
 silicates, hydrolysis of (BOGUE), A., ii, 112.

Sodium sulphate, equilibrium of magnesium chloride and (TAKEGAMI), A., ii, 80.
 sulphide, action of, on ferric oxide (WITT), A., ii, 403.
 sulphite, atmospheric oxidation of (DHAR, DATTA, and BHATTACHARYA), A., ii, 86.
 iridosulphite (SAILER), A., ii, 514.
 thioantimonate, reactions of, with metallic salt solutions (LANGHANS), A., ii, 353.
 thiosulphate, reaction between halogen cyanides and (KURTENACKER; KURTENACKER and FRITSCH), A., ii, 502.
 decomposition of mercury fulminate by (F. H. and P. V. DUPRE), A., i, 232.
 stabilisation and standardisation of solutions of (LOW), A., ii, 133.
 platinothiosulphate (SAILER), A., ii, 513.
 silver thiosulphate, reduction of, by hyposulphites (STREIGMANN), A., ii, 46, 147.
 stibiothiosulphate (v. SZILÁGYI), A., ii, 207.
Sodium detection and estimation:—
 detection of, in presence of magnesium (LUDWIG and SPIRESCU), A., ii, 215.
 estimation of, in blood (DOISY and BELL), A., ii, 413; (KRAMER and TISDALL), A., ii, 463.
 estimation of, in urine, blood, and feces (TISDALL and KRAMER), A., ii, 655.
Soils, influence of temperature on the absorbent properties of (STOQUER), A., i, 914.
 acid (ROBINSON; ROBINSON and BULLIS), A., i, 644.
 acidity of (FISHER), A., i, 215.
 influence of aluminium salts on acidity of (MIRASOL), A., i, 88.
 relation of bacterial activity to acidity of (STEPHENSON), A., i, 916.
 alkali, absorption of salts by (KELLEY and BROWN), A., i, 915.
 effect of organic matter on the reaction of (STEPHENSON), A., i, 916.
 arsenic in (LILLIG), A., i, 216.
 carbonates in (HARDY), A., i, 215.
 action of potassium ammonium nitrate on (KEMPF), A., i, 915.
 effect of salt solutions on (KELLEY and CUMMINS), A., i, 388; (NOLTE), A., i, 914.
 toxicity and osmotic pressure of soluble salts in (GREAVES and LUND), A., i, 758.

- Soils**, relation of solutions of, to their extracts (HOAGLAND, MARTIN, and STUART), A., i, 214.
- effect of crop growth on the physical state of (HOAGLAND and MARTIN), A., i, 215.
- detection of phosphates in (SHEDD), A., ii, 274.
- estimation of acidity in (FISHER), A., ii, 349; (LEMMERMANN and FRESENIUS), A., ii, 516.
- estimation of ammonium and potassium in (ARRHENIUS), A., ii, 412.
- estimation of arsenic in (REICHERT and TRELLES), A., ii, 519.
- estimation of colloidal material in (MOORE, FRY, and MIDDLETON), A., ii, 608.
- estimation of potassium in (CHRISTENSEN and FEILBERG), A., ii, 711.
- Soil solutions**, concentration and composition of (PARKER), A., i, 914.
- Soja bean**, amino-acids from glycinin of (JONES and WATERMAN), A., i, 521.
- nitrogen in nodules of (STROWD), A., i, 387.
- Solanum dulcamara*, anthocyanidins in the fruit of (JONESCO), A., i, 760.
- Solanum melongena* (egg-plant), constituents of (YOSHIMURA), A., i, 296.
- Solar spectrum**, elements in the (SAHA), A., ii, 4.
- gravitational displacement of the nitrogen band in the (GREEE and BACHEM), A., ii, 143.
- Solid solutions**. See **Solutions**, solid.
- Solids**, range of α -rays in (v. TRAUBENBERG), A., ii, 148.
- electrolytic ions in (GÜNTHER-SCHULZE), A., ii, 9.
- forces in surface films on (WILLIAMS), A., ii, 18.
- entropy of (LATIMER), A., ii, 380.
- polymersisation of (FIELDING), A., ii, 487.
- Solubility** (EPHRAIM), A., i, 339; ii, 305, 508; (HILDEBRAND and JENKS), A., ii, 23; (HILDEBRAND and BUEHNER), A., ii, 24; (HILDEBRAND), A., ii, 307; (EPHRAIM and MOSTMANN), A., ii, 338, 339.
- influence of position in substitution on (SIDGWICK and EWRANK), T., 979; (SIDGWICK and ALDOUS), T., 1001; (SIDGWICK and RUBIE), T., 1013.
- and diffusion (GEORGIJEVICS), A., ii, 491.
- reciprocal, of salts in solution (RAYEAU), A., ii, 386.
- Solution**, energy brought into action by (HUBBERT), A., ii, 303.
- Solution**, volume changes in (BURROWS), A., ii, 308.
- Solutions**, absorption of light by (v. HALBAN and GEIGEL), A., ii, 145.
- electrical conductivity of (CHRISTENSEN), A., ii, 9; (CLINTON), A., ii, 618.
- colloidal condition of sparingly soluble substances in (TRAUBE and KLEIN), A., ii, 683.
- influence of salts on chemical equilibria in (BRÖNSTED), T., 574.
- aqueous, physical properties of (PULVERMACHER), A., ii, 171.
- coloured. See **Coloured solutions**.
- non-aqueous, ionisation in (WALDEN), A., ii, 170, 309.
- solid, luminescence of (SCHMIDT), A., ii, 567.
- strong, osmotic pressure and freezing-point depression in (CERNATESCO), A., ii, 578.
- Solvents**, mixed, velocity of reaction in (CASHMORE, McCOMBIE, and SCARBOROUGH), T., 970.
- Sound**, velocity of, in gases (DIXON, CAMPBELL, and PARKER), A., ii, 621.
- motion of, in partly dissociated gases (EINSTEIN), A., ii, 249.
- Sparteine**, detection of (GRANT), A., ii, 71.
- Spectra** of luminous gases, effect of concentration on (MERTON), A., ii, 2.
- absorption, in the *L*-series (HEERTZ; SWEKAL), A., ii, 144; (HJALMAR), A., ii, 145; (COSTER), A., ii, 363, 532.
- of nitro-compounds (KEHRMANN and GOLDSTEIN), A., i, 271.
- arc, yellow, red, and infra-red (KIESS and MEGGERS), A., ii, 4.
- band, structure of (GEHRCKE and GLASER), A., ii, 611.
- differences of series of, in furnace and arc (KING), A., ii, 610.
- corpuseular (DE BROGLIE), A., ii, 232, 292; (M. and L. DE BROGLIE), A., ii, 323, 615.
- infra-red absorption, of gases (IMES), A., ii, 4; (HETTNER), A., ii, 144.
- of isotopes (LOOMIS), A., ii, 530.
- mass, and atomic weights (ASTON), T., 677.
- of chemical elements (ASTON), A., ii, 474, 565.
- Röntgen ray (FRICKE), A., ii, 6; (STENSSON), A., ii, 140; (HJALMAR), A., ii, 145, 292; (DUANE, FRICKE, and STENSTROM), A., ii, 145; (SWEKAL), A., ii, 292; (MOHLER and FOOTE), A., ii, 570.

- Spectra**, Röntgen ray, origin and nature of (KOSSEL), A., ii, 133.
 structure of (SMEKAL), A., ii, 615.
 absorption rays in (DAUVILLIER), A., i, 475.
 and the electron structure of atoms (DE BROGLIE and DAUVILLIER), A., ii, 475; (VEGARD; SMEKAL), A., ii, 874.
 mercury anticathode for production of (MÜLLER), A., ii, 569.
 of organic compounds of high molecular weight (HERZOG and JANCKE), A., ii, 531.
 rotation, influence of an electrical field on (HEITNER), A., ii, 139.
 and isotopy (HAAS), A., ii, 286.
 series, of the elements (BOHR), A., ii, 137.
 spark, of elements (DE GRAMONT), A., ii, 73.
 ultra-red absorption, of solids in thin layers (REINKOBER), A., ii, 613.
 ultra-violet spark (MILLIKAN), A., ii, 3.
Spectral series, table for calculation of (DEL CAMPO and CATALÁN), A., ii, 292.
Spectrochemistry of cyclic compounds (V. AUWERS), A., ii, 73; (V. AUWERS and FRÜHLING), A., ii, 229, 230.
Spectrophotometry in the visible and ultra-violet regions (MERTON), A., ii, 287.
Spirits, detection of methyl alcohol in (RABE; MAUE), A., ii, 220, 281; (HAHN), A., ii, 281.
Spleen, internal secretion of (EDDY), A., i, 906.
Spruce wood, cellulose content of (KLASON), A., i, 840.
Squalus sucklii (dogfish), nucleotides of the pancreas of (BERKELEY), A., i, 476.
Stability of organic compounds, measurement of (V. EULER and LAURIN), A., ii, 498.
Stalagmometer, new (ESCHBAUM), A., ii, 489.
Stannic acid. See under Tin.
Staphylococcus, toxicity of phenol solutions towards (BURGES), A., i, 291.
Starch (REYCHLER), A., i, 498; (KARRER), A., i, 707; (REYCHLER; KARRER, NÄGELI, HURWITZ, and WALTI), A., i, 768.
 occurrence of, in plants (SAMEC and HAZEDTL), A., i, 228.
 constitution of (KARRER and NÄGELI), A., i, 313.
 constitution and structure of, in granules and in solution (BIEDERMANN), A., i, 162.
Starch, viscosity of mixtures of, with viscose and xanthate (STERN), A., i, 226.
 products of hydrolysis of (SAMEC and MAYER), A., i, 397.
 constitution of the compound of iodine and (LOTTERMOSER), A., i, 708.
 methylation of (KARRER and NÄGELI), A., i, 311.
 action of soluble chlorides and sulphates on (COURTONE), A., i, 96.
 action of formaldehyde on (SAMEC and MAYER), A., i, 400.
 decomposition of, outside the living cell (TESCHENDORF), A., i, 163.
 solutions, electro-disintegration of (SAMEC and MAYER), A., i, 707.
 ethyl ethers (LILLENFELD), A., i, 650.
 estimation of (QUISUMBING), A., ii, 67.
 estimation of, polarimetrically (LÜHRIG), A., ii, 356.
 estimation of, by hydrolysis with taka-diastase (HORTON), A., ii, 661.
Stearic acid, benzyl ester (SHONLE and ROW), A., i, 341.
 α -glucose, raffinose, and sucrose esters (HENS, MESSMER, and KLETZL), A., i, 306.
Stearic acid, hezabromo-, and its salts (COFFEY), T., 1306.
 λ -hydroxy-, and its derivatives (THOMAS and DECKERT), A., i, 219.
Stearin, diphenylurethane from (GRIN and WITTKA), A., i, 222.
Stearyl oxyacetic acid (GRÜN and WITTKA), A., i, 222.
 β -Stearyltetra-acetylglucose (HENS, MESSMER, and KLETZL), A., i, 306.
Steel. See under Iron, Cobalt steel, and Nickel steel.
Stercobilin in urine of infants (BAUE and GARBAN), A., i, 755.
Stereochemical studies (HOLMBERG), A., i, 539.
Sterigmatocystis nigra. See *Aspergillus niger*.
Sterols, iodine values of (MACLEAN and THOMAS), A., i, 565.
Stictic acid, and its acetyl derivative (BARCELLINI and MONCADA), A., i, 865.
Stilbene nitrosite (WIELAND and BÜLMICH), A., i, 552.
Still-heads for fractionating (MOORE), A., ii, 433; (LESSING), A., ii, 434.
Stilpnomelane, analysis of (SHANNON), A., ii, 458.
Stizobolium (velvet bean), dihydroxy-phenylalanine from (MILLER), A., i, 84.
Streptococcus, almy lactic acid (VIOLE), A., i, 386.

- Strontium**, numerical relation between calcium and (SAKOSCHANSKY), A., ii, 501.
- Strontium tri- and per-thiocarbonates** (YEOMAN), T., 49.
- chloride, equilibrium of, with barium and calcium chlorides (SCHAEFER), A., ii, 96.
- equilibrium of, with potassium and sodium chlorides (SCHOLICH), A., ii, 97.
- hydrides (TOMLINSON), A., ii, 453.
- Strontium detection, estimation, and separation** :—
- detection of, in presence of calcium and barium (LUDWIG and SPIRESCU), A., ii, 276.
- estimation of, volumetrically, in presence of barium (KOLTHOFF), A., ii, 62.
- separation of, from barium and calcium (KOLTHOFF), A., ii, 63.
- Strophanthin**, distinction between ouabain and (RICHAUD), A., ii, 601.
- Strychnine acid methylarsenate** (BOUILLLOT), A., i, 884.
- estimation of, in presence of other alkaloids (HARVEY and BACK), A., ii, 471.
- Strychnos alkaloids** (LEUCHS, HELLRIGEL, and HEERING), A., i, 883.
- Strychnic acid**, and its salts (FRIEDERICH; EISEBECK and JABLONSKI), A., i, 505.
- Styrene**, preparation of, from ethylbenzene (v. BRAUN and MOLDANKE), A., i, 405.
- additive power of derivatives of (REICH, VAN WICK, and WAELE), A., i, 332.
- Styrene**, bromo-derivatives, isomerism of (DUFRAISSE), A., i, 17.
- α -bromo-derivatives, isomerism of (DUFRAISSE), A., i, 104.
- α -bromo, autoxidation of (DUFRAISSE), A., i, 168.
- bromonitro-, addition of aromatic amines to (WOKKALL), A., i, 411.
- 2-**Styryliscocyanine**, and its picrate (FISCHER and SCHEIBE), A., i, 56.
- 2-**Styryl-4:6-dimethylquinoline** and its salts and 2-*o*- and -*p*-nitro- (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- Styryl methyl ketone**, *o*-chloro- (WEITZ and SCHEFFER), A., i, 859.
- 2-**Styryl-4-methylquinoline**, and its salts (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- 2-**Styrylquinoline**, and *mono*- and *di*-hydroxy-, methiodides (WERNER), A., i, 55.
- Suberone**, catalytic hydrogenation of (GOLCHOT), A., i, 114.
- Sublimation**, quantitative, apparatus for (FULLER), A., ii, 222.
- of metals (VAN LIEMPT), A., ii, 165.
- Substance**, $C_6H_2N_2$, from methylene dicyanide and formaldehyde (OSTLING), A., i, 321.
- $C_2H_2N_2$, from methylene dicyanide and acetaldehyde (OSTLING), A., i, 321.
- $C_6H_5O_2N_3$, from malononitrile and nitrous acid (DIELS and BORGWARDT), A., i, 548.
- $C_6H_5O_2P$, from lactic acid and phosphorus iodide (GAUCHER and ROLLIN), A., i, 220.
- $C_6H_4O_2NClS_2$, from the action of sulphur dichloride with *o*-nitrothiobenzene (LECHER and SIMON), A., i, 860.
- $C_7H_5O_2I$, and its salts and derivatives, from dimethylpyrone, barium hydroxide and iodine (COLLIE and REILLY), T., 1553.
- $C_8H_{11}O_2$, from degradation of scopoline (HESS), A., i, 684.
- and its derivatives, from formaldehyde and acetone (MÜLLER), A., i, 543.
- $C_9H_{11}N$, from degradation of scopoline (HESS), A., i, 684.
- $C_9H_{11}O_2N_{12}$, from $C_2H_5O_2N_3$, and alcohol (DIELS and BORGWARDT), A., i, 549.
- $C_{10}H_{20}O$, from oxidation of dianlyleno (SCHINDELMEISER), A., i, 491.
- $C_{10}H_{11}ON_3I$, from eseroline methiodide, methyl iodide, and sodium ethoxide (STEDMAN), T., 892.
- $C_{11}H_6O_4$, from sodium and phenyl acetate (PERKIN), T., 1289.
- $C_{11}H_{15}O_2N_2$, and its salts, from trimethyl- β -phthalimidodethylammonium salts and silver oxide (GABRIEL), A., i, 59.
- $C_{12}H_8O_4$, from ethyl cyanoacetate and resorcinol (BATER and SCHODER), A., i, 354.
- $C_{12}H_8O_4$, and its salts and derivatives, from decomposition of benzoquinone (STOLTZENBERG and STOLTZENBERG-BEHOUSS), A., i, 32.
- $C_{12}H_8O_4N_2S_2$, from methyl diazoacetate and thiobenzoyl chloride (STAUDINGER, STEGWARDT, ANTIES, DOMMER, and GERHARDT), A., i, 44.
- $C_{12}H_{12}O_2NCl$, from chloromethylacetate and quinoline (ULICH and ADAMS), A., i, 302.
- $C_{12}H_{12}ON_2Cl_2$, from cuminaldazine and chloral hydrate (KNÖPFER), A., i, 159.

- Substance, $C_{14}H_{13}O_2NCl$** , from pyridine and chloromethyl benzoate (ULICH and ADAMS), A., i, 362.
- $C_{14}H_{18}N_2$** , from reduction of 1-ethyl-2-pyridone (RUZICKA), A., i, 591.
- $C_{15}H_{14}N_6$** , from methylene dicyanide and acetone (OSTLING), A., i, 321.
- $C_{15}H_{14}O_2N_2$** , and its salts, from β -phthalimidoethylpyridinium bromide and silver oxide (GAERTEL), A., i, 58.
- $C_{15}H_{10}OCl_2S$** , and its derivatives, from thio-carbonyl chloride and benzoyl-phenyldiazomethane (STAUDINGER, SIEGWART, ANTHER, BOMMER, and GERHARDT), A., i, 44.
- $C_{15}H_{15}O_2N_2S$** , from benzenesulphonyl-acetamide and *o*-toluenediazonium chloride (TRÖGER and BERNDT), A., i, 746.
- from *p*-toluenesulphonylacetamide and benzenediazonium chloride (TRÖGER and BERNDT), A., i, 746.
- $C_{15}H_{14}O_2N_2$** , and its salts, from β -phthalimidoisopropylpyridinium salts and silver oxide (BÖSE), A., i, 60.
- and its salts, from γ -phthalimido-propylpyridinium salts and silver oxide (BÖSE), A., i, 60.
- $C_{15}H_{13}O_2N_2S$** , from *p*-toluenesulphonylacetamide and *o*-toluenediazonium chloride (TRÖGER and BERNDT), A., i, 746.
- $C_{15}H_{12}O_2N_2S$** , from *p*-toluenesulphonylacetamide and diazotised *o*-anisidine (TRÖGER and BERNDT), A., i, 746.
- $C_{17}H_{17}O_2$** , from methyl diazoacetate and diphenylketen (STAUDINGER and REBER), A., i, 247.
- $C_{17}H_{15}ON$** , from benzoylacetone and *p*-toluidine (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 56.
- $C_{18}H_{16}O_2$** , from ethyl diazoacetate and diphenylketen (STAUDINGER and REBER), A., i, 247.
- $C_{18}H_{16}O_2$** , from dimethylmalonyl chloride and anisole (FLEISCHER and STEMMER), A., i, 253.
- $C_{18}H_{16}O_2S_2$** , from thianthrendiethyl-indanedione, phosphorus and hydriodic acid (FLEISCHER and STEMMER), A., i, 265.
- $C_{20}H_{19}Cl_2S_2$** , from α -chloronaphthalene and sulphur chloride (RAY), T., 1964.
- $C_{21}H_{12}O_2$** , from piperonaldehyde and fluorene (DE FAZI), A., i, 569.
- Substance, $C_{21}H_{19}O_2N_2S$** , from benzenesulphonyl-acetic acid and *o*-toluenediazonium salts (TRÖGER and BERNDT), A., i, 746.
- $C_{21}H_{15}O_2N_2S$** , from benzenesulphonyl-acetic acid and diazotised *o*-anisidine (TRÖGER and BERNDT), A., i, 746.
- $C_{21}H_{20}ON_2$** , from diphenylketen and diphenyldiazomethane (STAUDINGER and REBER), A., i, 247.
- $C_{22}H_{22}N_6$** , from tetrazotised benzidine and β -naphthylamine (SCHMIDT and HAGENBÖCKER), A., i, 893.
- $C_{22}H_{22}O_2$** , from reduction of 87-dichloro- $\alpha\alpha\beta\beta$ -tetra-*p*-anisyl- $\alpha\beta$ -butene (BRAND and KERCHER), A., i, 787.
- $C_{22}H_{20}O_2N_2$** , from diphenylketen and benzoylphenyldiazomethane (STAUDINGER and REBER), A., i, 248.
- $C_{24}H_{28}O_8$** , from the action of light on $\alpha\alpha\beta\beta$ -tetra-*p*-anisyl- $\Delta\alpha\beta\gamma$ -butatriene (BRAND and KERCHER), A., i, 787.
- Substitution, influence of, on equilibria in binary systems** (KREMANN, LUPFER, and ZAWODSKY), A., i, 561; (KREMANN and ZAWODSKY), A., i, 601.
- influence of, on chemical reactions** (FRANZEN and ROSENBERG), A., i, 233; (FRANZEN and ENGEL), A., i, 713.
- Substitution reactions** (MEYER), A., i, 855.
- cis*-Succinatodiethylenediaminecobaltic salts, and dibromo-** (DUFF), T., 385.
- Succinic acid, dichloro-**, and its salts and esters, stereochemistry of (HOLMBERG), A., i, 539.
- Succinic acids, velocity of hydration of anhydrides of** (VERKADE), A., ii, 813.
- Succinyldiacetic acid, and its ethyl ester** (WILL-TATTER and PFANNENSTIEL), A., i, 91.
- Succinylsuccinic acid, ethyl ester, preparation of** (SOMMELET and COCROUX), A., i, 540.
- Sucrose** (*saccharose*; *cane-sugar*), optical rotation of mixtures of dextrose, laevulose and (VOSBURGH), A., ii, 233.
- heat of combustion of** (HENNING), A., ii, 379.
- heat of inversion of** (DIXON and BAL), A., ii, 86.
- dry distillation of** (REILLY), A., i, 846.
- catalytic combustion of** (BRANDT), A., i, 11.
- activity of water in solutions of** (GARNER and MASSON), A., ii, 250.

- Sacrose** (*saccharose*; *cane-sugar*), compounds of, with potassium and sodium salts (HELDERMAN), A., i, 225.
 estimation of (JACKSON and GILLIS), A., ii, 67.
 estimation of, by the inversion method (HERLES; SÁZAVSKÝ), A., ii, 418; (ROSE), A., ii, 465.
 estimation of, in presence of other sugars (BEHRE), A., ii, 528.
 analysis of mixtures of raffinose and, by the optical method (BROWNE and GAMBLE), A., ii, 661.
- Sudan grass**, hydrocyanic acid in (SWANSON), A., i, 913.
- Sugar acetones**, constitution of (KARREN and HUBWITZ), A., i, 767.
- Sugars**, structure and constitution of (BOESEKEN and COUVERT), A., i, 497.
 chemistry of (KILIANI), A., ii, 304.
 effect of ammonium molybdate on the rotation of (TANRET), A., i, 498.
 hydrolysis of (COLIN), A., ii, 608.
 containing selenium and sulphur (WREDE), A., i, 161.
 fermentation of, by *Bacillus lactis aerogenes* (NEUBERG, NORD, and WOLFF), A., i, 148.
 fermentation of, by moulds (COHEN), A., i, 150.
 third form of fermentation of (NEUBERG and URSUM), A., i, 81.
 in blood (FRIGL), A., i, 143; (LANGFELDT), A., i, 473.
 physico-chemical state of (ONOHARA), A., i, 904.
 physiology of (EGGE), A., i, 285.
 preparation of acyl compounds of (HESS and MESSMER), A., i, 805; (ZEMPLÉN), A., i, 498.
 unsaturated reduction products of (BERGMANN and SCHOTTE), A., i, 307, 648.
 estimation of, in small quantities (AMBARD), A., ii, 220.
 estimation of, iodometrically (SHAFFER and HARTMANN; BAKER and HULTON), A., ii, 417.
 estimation of, by the rotatory power (LIVERSEGE), A., ii, 714.
 estimation of, volumetrically (v. FELLENERG), A., ii, 136; (IONESCU and VARGOLICI), A., ii, 233.
 estimation of, in blood (EISENHARDT), A., ii, 283; (CLOGNE and RICHAUD), A., ii, 355; (PONDER and HOWIE), A., ii, 417.
 estimation of, in boric acid (GILMOUR), A., ii, 221.
- Sugars**, estimation of, in wine (FRESENIUS and GRÜNHUT), A., ii, 221; (SUMNER), A., ii, 526; (SUMNER and GRAHAM), A., ii, 564; (VAN DER HARST and KOERS), A., ii, 601; (BENEDICT and OSTERBERG), A., ii, 680.
 pentose, estimation of (SPOHR), A., ii, 714.
- Sulphide hydrosols**, colour changes on coagulation of (v. HAHN), A., ii, 46, 577.
- Sulphide ores**, enrichment of (YOUNG and MOORE), A., ii, 120.
- N-Sulphidobisacetamide** (NAIK), T., 1167.
- N-Sulphidobisbenzamide** (NAIK), T., 1168.
- N-Sulphidobisbutyramide** (NAIK), T., 1168.
- Sulphidobis-β-hydroxydiethyl sulphide**, and its diacetyl derivative (BENNETT and WHISCOPE), T., 1863.
- N-Sulphidodipthalimide** (NAIK), T., 1170.
- Sulphidodithiocarbamide dihydrochloride** (NAIK), T., 1168.
- 5-Sulphinoarsenobenzene, 3:3'-diamino-4:4'-dihydroxy-, hydrochloride** (KING), T., 1115.
- 5-Sulphinophenylarsinic acid, 3-amino-4-hydroxy-** (KING), T., 1113.
- Sulphites**. See under Sulphur.
- Sulphite liquor lactones** from lignin, and their derivatives (HOLMBERG), A., i, 849; (HOLMBERG and SJÖBERG; HOLMBERG and WINTZELL), A., i, 850.
- Sulphite liquors**, extraction of, with benzene and with ether (HOLMBERG), A., i, 25.
- Sulphoacetic acid** as a condensing agent (SCHNEIDER and SREBACH), A., i, 859; (SCHNEIDER and KUNAU), A., i, 879.
- 5-Sulphoarsenobenzene, 3:3'-diamino-4:4'-dihydroxy-, hydrochloride** (KING), T., 1117.
- 4-p-Sulphobenzeneazo-5-amino-2-p-sulphophenyl-1:2:3-benzotriazole**, sodium salt (SCHMIDT and HAGEN-BÜCKER), A., i, 898.
- 8-p-Sulphobenzeneazodihydroquinine, 5-amino- and 5-hydroxy-** (JACOBS and HEIDELBERGER), A., i, 45.
- 4-p-Sulphobenzeneazo-1:8-dihydroxynaphthalene** (HELLER and KRETZSCHMANN), A., i, 458.
- p-Sulphobenzeneazonaphthylaminocamphor** (FORSTER and SAVILLE), T., 797.
- p-Sulphobenzeneazophenylaminocamphor** (FORSTER and SAVILLE), T., 798.

- cis-o*-Sulphobenzoacetatodiethylenediaminecobaltic salts (DUFF), T., 1985.
- a*-Sulphocarboxylic acids, preparation of (BACKER and DUBSKÝ), A., i, 9.
- a*-Sulphodipropionic acid (LOVÉN and AHLBERG), A., i, 223.
- Sulphonamides, aromatic, action of diazo-salts on (DUFF, WHITEHEAD, and WORMALL), T., 2088.
- manufacture of alkyl derivatives of (BRITISH CELLULOSE AND CHEMICAL MFG. CO., LTD., BADER, and NIGHTINGALE), A., i, 788.
- Sulphonaphthyl-5-pyrazolone-3-carboxylic acids, sulphonaphthylhydrazones, sodium salts (JOHNSON), A., i, 690.
- Sulphonation, influence of iodine in (AUGER and VARY), A., i, 667.
- Sulphonic acids, preparation of (ROSENMUND), A., i, 370.
- action of magnesium organic compounds with chlorides and esters of (WEBER and SCHENK), A., i, 664.
- identification of (VAN DUIN), A., ii, 221.
- Sulphonic acid groups, replacement of, by halogens (DATTA and BROUMIK), A., i, 331.
- migration of, in aromatic compounds (MARTINET), A., i, 732.
- Sulphonium compounds, molecular conductivity of, in acetone (RAY and KUMAR), T., 1643.
- Sulphonylnaphthalenediamines, aryl derivatives, and their sulphonic acids (MORGAN and GRIST), T., 602.
- p*-Sulphophenylacetic acid, *o*-nitro-, and its silver salt (MARTINET and DORNIER), A., i, 516.
- 5-Sulphophenylarsenious acid, 3-amino-4-hydroxy- (KING), T., 1420.
- 5-Sulphophenylarsinic acid, 3-amino-1-hydroxy- (KING), T., 1114.
- 1-*or*-Sulphophenyl-5-pyrazolone-3-carboxylic acid, *o*-sulphophenylhydrazones, sodium salt (JOHNSON), A., i, 690.
- a*-Sulphopropion-*p*-aminoanilide (BACKER), A., i, 855.
- a*-Sulphopropionanilide, and its salts and aniline ester (BACKER), A., i, 855.
- a*-Sulphopropionic acid, and its salts (FRANCMONT and BACKER), A., i, 9; (BACKER), A., i, 853.
- γ -*a*-Sulphopropionic acid, resolution of, and its salts (FRANCMONT and BACKER), A., i, 93.
- a*-Sulphopropion-*p*-toluidide, sodium salt and *p*-toluidine ester (BACKER), A., i, 853.
- 5-Sulpho-5'-sulphinoarsenobenzene, 3,3'-diamino-4:4'-dihydroxy- (KING), T., 1118.
- Sulphoxyl compounds (BINZ and HABERLAND), A., i, 9; (BINZ and HOLZAPFEL), A., i, 30.
- Sulphoxylates, estimation of (HELVIG), A., ii, 653.
- Sulphur, preparation of (RIESENFELD), A., ii, 40.
- valency of (LECHER and SIMON), A., i, 414, 860; (LECHER and GOEBEL), A., i, 853.
- colloidal, polychroism of (AUERBACH), A., ii, 40.
- chromogenetic properties of (DAVIS and RIXON), A., ii, 530.
- solubility of, in alkali hydroxides (CALCAGNI), A., ii, 195.
- equilibrium of copper, antimony, and (GUERTLER and MEISSNER), A., ii, 589.
- equilibrium of copper, lead, and (GUERTLER and MEISSNER), A., ii, 402.
- equilibrium of manganese, copper, and (GUERTLER and MEISSNER), A., ii, 640.
- oxidation of, in quartz media (MACINTYRE, GRAY, and SHAW), A., ii, 327.
- relative activity of allotropic forms of, towards caoutchouc (TWISS and THOMAS), A., i, 876.
- replacement of halogens by (ROSENMUND and HARMS), A., i, 103.
- fertilising action of (NICOLAS), A., i, 216.
- Sulphur compounds, inorganic, magnetochemistry of (PASCAL), A., ii, 692.
- Sulphur monochloride, constitution of, and its action with tertiary aromatic arsines (ZUCKERKANDT and SINAI), A., i, 901.
- action of, on organic acid amides (NAIK), T., 1166.
- action of ethylene with (MAX, POPE, and VERNON), T., 634.
- action of, on substituted ethylenes (POPE and SMITH), T., 396.
- chlorides, action of, on substituted ethylenes (COFFEY), T., 94.
- Sulphuryl chloride, chlorination of benzene with (SILBERRAD), T., 2029.
- Polysulphides, estimation of sulphur in, volumetrically (WÖBER), A., ii, 274.
- Sulphur dioxide, preparation of (VEREN CHEMISCHER FABRIKEN MANNHEIM), A., ii, 196.
- vacuum spectrum of (BAIR), A., ii, 362.

- Sulphur dioxide**, equilibrium of, with ammonia and mercuric oxide (RUFF, KRÖHNERT, and BRAUN), A., ii, 202.
- Sulphurous acid**, estimation of, in organic compounds (FROBOESE), A., ii, 592.
- Sulphites**, oxidation of concentrated solutions of (MILBRAUER and PAZOUERK), A., ii, 635.
- Sulphuric acid**, preparation of (RIESEN-FELD), A., ii, 40; (SCHMIEDEL and KLENCKE), A., ii, 196.
- concentrated, electrolysis of, at high temperatures (HOFFMANN), A., ii, 677.
- distillation of mixtures of nitric acid and (PASCAL and GARNIER), A., ii, 504.
- action of mixtures of nitric acid and, on metals (PASCAL, GARNIER, and LABOURASSE), A., ii, 585.
- absorption of ethylene and propylene by (PLANT and SIDGWICK), A., i, 153.
- solubility of metallic sulphates in (KENDALL and DAVIDSON), A., ii, 453.
- equilibrium of the reaction between hydrofluoric acid and (TRAUBE and REUBKE), A., ii, 639.
- compounds with alkali sulphates (KENDALL and LANDON), A., ii, 45.
- compounds of, with benzoic anhydride and benzoyl chloride (BERGMANN and RADT), A., i, 666.
- mixed anhydrides of, with carboxylic acids (VAN PESKI), A., i, 302.
- acid salts, decomposition of, by solvents (SABALITSCHKA), A., ii, 401.
- estimation of, in presence of calcium, chromium, and phosphoric acid (WINKLER), A., ii, 57.
- estimation of water in mixtures of nitric acid and (BERL and v. BOLTENSTERN), A., ii, 705.
- Sulphates**, estimation of, in soda-lime glass (IKAWA), A., ii, 706.
- estimation of, in urine (FISKE), A., ii, 556.
- estimation of, in water (WINKLER), A., ii, 126.
- Persulphates**, stability of (ELBS and NEHER), A., ii, 693.
- action of solutions of, on metallic silver (HIGSON), T., 2043.
- Hyposulphites** (*hydrosulphites*), estimation of (SMITH), A., ii, 652; (HELWIG), A., ii, 653.
- estimation of, volumetrically (FORMHALS), A., ii, 58.
- Sulphur**:—
- Thiosulphates**, conversion of, into sulphates (GLUUD), A., ii, 697.
- estimation of, in presence of sulphites and tetrathionates (KURTE-NACKER and FRITSCH), A., ii, 556.
- Trithionic acid**, structure of (v. SZILÁGYI), A., ii, 199.
- Sulphur organic compounds**, action of Grignard reagents on (HEPWORTH and CLAPHAM), T., 1188.
- Sulphur detection and estimation**:—
- detection of, in pulmonary epithelial tissue (FAURE-FREMIET, DRAGOIU, and DE SIREEL), A., ii, 228.
- estimation of, by the lamp method (BOWMAN), A., ii, 706.
- estimation of, calorimetrically in iron and steel (MISSON), A., ii, 556.
- estimation of, in oils (HAUSER), A., ii, 517.
- estimation of, in organic substances (GRÉGOIRE and CARMAUX), A., ii, 461.
- estimation of, volumetrically, in polysulphides (WÖBER), A., ii, 274.
- estimation of, in urine (FISKE; RABBIT and STILLMUNKES), A., ii, 556.
- Sulphur auratum**. See Antimony pentasulphide.
- Sulphuryl chloride**. See under Sulphur.
- Sun**, elements in the (SAHA), A., ii, 4.
- Superphosphates**. See under Phosphorus.
- Surfaces**, orientation of molecules in (HARKINS and CHENG), A., ii, 242.
- Surface energy** of liquids (HAMMICK), A., ii, 84.
- of organic liquids (HARKINS and CHENG), A., ii, 242.
- Surface tension** (HARKINS and GRATTON; HARKINS and EWING), A., ii, 87.
- measurement of (RICHARDS and CARVER), A., ii, 354.
- determination of, from capillary rise (SUGDEN), T., 1483.
- influence of, on fusion (RIE), A., ii, 164.
- and heat of vaporisation (HERZ), A., ii, 301.
- of salts of the fatty acids (WALKER), T., 1521.
- of saturated liquids (REYNOLDS), T., 467.
- of soap solutions (WHITE and MARSDEN), A., ii, 88.
- of unimolecular layers (MARCELIN), A., ii, 488.

Swelling, nature of (KNOEVENAGEL and EBERSTADT), A., i, 402; (KNOEVENAGEL and MOTZ), A., i, 709; (KNOEVENAGEL and BREGENZER), A., i, 709, 710, 771.

Syncaïne, excretion of, in urine (THIEULIN), A., i, 206.

Syphilis, treatment of, with bismuth salts (SAZERAC and LEVADITI; FOURNIER and GUENOT), A., i, 908.

Syphon, automatic (PELLE), A., ii, 255.

Systems of chemical compounds, number of independent variables in (RAVEAU), A., ii, 31, 682; (RENGADE), A., ii, 93; (WALD), A., ii, 440; (EHRlich), A., ii, 580.

binary. See Binary systems.

disperse, structure of (WEISSENBERGER), A., ii, 578.

optical properties of (WEIGERT), A., ii, 289; (WEIGERT and POHLE), A., ii, 290.

viscosity of (LÜERS and SCHNEIDER), A., ii, 86.

ternary. See Ternary systems.

T.

T.N.A. See Aniline, *tetranitro*.

Taka-diastase, use of, in estimating starch (HORTON), A., ii, 661.

Tannins (FREUDENBERG, BÖHME, and BECKENDORF), A., i, 576; (FREUDENBERG and WALPUKSI), A., i, 799. estimation of (WILSON and KERN), A., ii, 719.

estimation of, in wine (CLARENS), A., ii, 719.

Tantalum :—

Tantalocolumbates, analysis of (SCHOELLER and POWELL), T., 1927.

Tartaric acid, rotatory power of (DE MALLEMANN), A., i, 7, 153.

inversion of rotation of derivatives of (DE MALLEMANN), A., ii, 614.

decomposition of, by heat (CHATTAWAY and RAY), T., 34.

salts, active and racemic, solubilities of (DUBOUX and CUTTAT), A., i, 763.

physiological action of (HARA), A., i, 478.

complex cupric salts of (PACKER and WARR), T., 1348.

detection of, in presence of formic and oxalic acids (KRAUSS and TAMPKER), A., ii, 466.

detection of, in wines (MATHIEU), A., ii, 662.

Tartaric acid, nitro-, preparation of (LACHMAN), A., i, 303.

Tartronic acid, methyl ester (FISHER and SIMONS), A., i, 303.

Taurine, action of, with α -naphthylcarbimide (SCHMIDT), A., i, 652.

Tea, estimation of caffeine in (UGARTE), A., ii, 470.

Tellurium, discovery of (DIERGART), A., ii, 42.

atomic weight of (BRUYLANTS and DESMET), A., ii, 448.

equilibrium in the system, iodine and (DAMIENS), A., ii, 110, 257.

Tellurium subbromide (DAMIENS), A., ii, 546, 636.

subiodide (DAMIENS), A., ii, 110.

tetraiodide (DAMIENS), A., ii, 399.

dioxide, use of, in combustion analysis (GLAUSER), A., ii, 416.

Tellurium organic compounds (KNAGES and VERNON), T., 105; (VERNON), T., 637.

acetylacetone, and its derivatives (MORGAN and DREW), T., 610.

Temperature, measurement of, by means of tables of vapour tension (STOCK, HENNING, and KUSS), A., ii, 432. critical. See Critical.

high, investigations at (RUFF and MUGDAN), A., ii, 485; (RUFF and SCHMIDT), A., ii, 486.

low, experiments at (CROMMELIN), A., ii, 573.

Temperature-coefficients of chemical reactions (COX), T., 142.

3,3'-Terephthalylidene-1:1'-dimethylindene (MAYER, SIEGLITZ, and LEUWIG), A., i, 555.

Ternary systems, equilibrium in (MAZZETTI), A., ii, 29; (JANECKE; VORISCH), A., ii, 95, 96; (SCHAEFER), A., ii, 96; (SCHOLICH), A., ii, 97.

Terpenes, chemistry of (HENDERSON and MARSH), T., 1492.

optical properties of (MÜLLER), A., i, 678.

Tetra-acetoxylbenzothianthrene (BRASS and KOHLER), A., i, 435.

Tetra-acetoxymercurofluorescein (WHITE), A., i, 71.

Tetra-acetoxymercurophenolsulphophthalein (WHITE), A., i, 71.

Tetra-acetyl-D-fructose, isomeric chloro derivatives (JAEGER), A., i, 10.

β -D-Tetra-acetylglucosido- α -chloromandelic acid (KARREN, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 262.

β -D-Tetra-acetylglucosido- α -p-methylmandelic acid (KARREN, BAUMGARTEN, GÜNTHER, HARDER, and LANG), A., i, 262.

- Tetra-acetylglucosidotrimethylammonium bromide** (KARRER and SMIRNOV), A., i, 766.
- Tetra-acetylquinazide** (FISCHER), A., i, 419.
- Tetra-acetylquinyll chloride**, preparation and derivatives of (FISCHER), A., i, 419.
- ααββ*-Tetra-*p*-anisylbutane**, *ββγγ*-tetra-bromo-, and *ββγγ*-tetrachloro- (BRAND and KERCHER), A., i, 787.
- ααββ*-Tetra-*p*-anisyl-*Δαβγ*-butatriene** (BRAND and KERCHER), A., i, 787.
- ααββ*-Tetra-*p*-anisyl-*Δβ*-butenes**, *βγ*-di-chloro- (BRAND and KERCHER), A., i, 787.
- Tetra-anisylmethane** (MEISENHEIMER, v. BUDKEWICZ, KANANOW, and NERESHEIMER), A., i, 359.
- ααββ*-Tetra-aryl-*Δβ*-butenes** (BRAND), A., i, 785.
- Tetrabenzoylethylene**, photochemistry of (v. HALBAN and GEIGEL), A., ii, 147.
- Tetracosanol**, and its acetate (PSCHORR and PFAFF), A., i, 4.
- 4:4'-7:7'-Tetraethyl-*ββ*-periacenaphthdi-indanediones** (FLEISCHER and SIEFERT), A., i, 256.
- 4:4'-7:7'-Tetraethyl-*ββ*-periacenaphthdi-indane-3:5:8-trione** (FLEISCHER and SIEFERT), A., i, 255.
- Tetraethyldiaminofuryldiphenylmethane**, and its salts (FISCHER and GRAHL), A., i, 42.
- Tetraethyldiaminohydroxyisobutyric acid**, ethyl ester (FOURNEAU), A., i, 548.
- Tetraethylpiperazonium dibromide** (MEYER and HOPFF), A., i, 852.
- Tetraglucosan**, and its derivatives (A. and J. PICTET), A., i, 647, 766.
- Tetrahydrite**, analysis of (SHANNON), A., ii, 458.
- ψ*-Tetrahydroanemonic acid**, and its hydriodide and methyl ester (FUJITA), A., i, 792.
- iso*-Tetrahydroanemonin** (ASAHINA and FUJITA), A., i, 799.
- Tetrahydroatracetylene** (TAKAGI), A., i, 733.
- Tetrahydrocarbazole**, and its derivatives, and amino-, and nitro-, and 8-chloro-5-nitro- (PERKIN and PLANT), T., 1925.
- Δ*³-Tetrahydrocymene**, 1-nitro-2-*iso*-oximinio- (WIELAND and REINDEL), A., i, 553.
- Tetrahydro-*ψ*-demethylscopolines**, and their derivatives (GADAMER and HAMMER), A., i, 589.
- Tetrahydrofuran-2:5-dipropionic acid** (ASAHINA and FUJITA), A., i, 799.
- Tetrahydrofurfurylcamphor** (WOLFF), A., i, 514.
- β*-Tetrahydro-2-furylethylamine**, and its salts (WINDAUS and DALMER), A., i, 118.
- β*-Tetrahydro-2-furylpropionic acid**, and its ethyl ester (WINDAUS and DALMER), A., i, 118.
- Tetrahydrokawaic acid** (BORSCHKE and ROTH), A., i, 862.
- Tetrahydromachilene** (TAKAGI), A., i, 732.
- Tetrahydronaphthalene**, preparation of (AKTIEN GESELLSCHAFT FÜR ANLINFABRIKATION), A., i, 333.
- preparation of derivatives of (KON and STEVENSON), T., 87.
- Tetrahydronaphthalene**, mono- and di-amino-, and nitroamino- and di-nitro-, and their derivatives (TETRALIN G. m. b. H.), A., i, 406.
- β*-amino-*α*-hydroxy-, and its hydrochloride (TETRALIN G. m. b. H.), A., i, 559.
- 2-bromo-1-hydroxy-, and 2-chloro-1-hydroxy- (STRAUS, ROHRBACKER, and LEMMEL), A., i, 172.
- αβ*-*β*-bromo-*α*-hydroxy-, and *αδ*-di-chloro- (v. BRAUN and KIRSCHBAUM), A., i, 408.
- 1:2-di-hydroxy-, isomeric (STRAUS, ROHRBACKER, and LEMMEL), A., i, 172.
- Tetrahydronaphthalenesulphonic acid**, and their derivatives (TETRALIN G. m. b. H.), A., i, 559.
- Tetrahydronaphthanthraquinones** (SCHROETER), A., i, 861.
- Tetrahydronaphthols**, and their phenylurethanes (STRAUS, ROHRBACKER, and LEMMEL), A., i, 172; (BROCHET and CORNUBERT), A., i, 563.
- αα*-**Tetrahydronaphtholcarboxylic acid**, and its derivatives (FARBEN-FABRIKEN VORM. F. BAYER & Co.), A., i, 567.
- o*-**Tetrahydro-*β*-naphtholbenzoic acid**, and its derivatives (SCHROETER), A., i, 861.
- α*- and *β*-**Tetrahydronaphthyl disulphides** (TETRALIN G. m. b. H.), A., i, 559.
- o*-**Tetrahydro-*β*-naphthylmethylbenzoic acid**, and its derivatives (SCHROETER), A., i, 861.
- α*- and *β*-**Tetrahydronaphthylthiols** (TETRALIN G. m. b. H.), A., i, 559.
- Tetrahydronaphthylthiolacetic acids** (TETRALIN G. m. b. H.), A., i, 559.
- 3:5:3':5'-**Tetraketeto-4:4'-bis(dithio-1:1:1':1'-tetramethyldicyclohexyl 2:2'-disulphide** (NAIR), T., 1240.

- 2:3:6:7-Tetramethoxyanthraquinonediimide, and *dinitro*-. (KEFFLER), T., 1480.
- 4:6:4':6'-Tetramethoxy-2:2'-dimethyldiphenylhydroxylamine, and its *N*-oxide, quinonoid salts (MEYER and REPPE), A., i, 237.
- 4:6:4':6'-Tetramethoxy-2:2'-dimethyldiphenylnitric oxide (MEYER and REPPE), A., i, 237.
- 2:4:2':4'-Tetramethoxydiphenylhydroxylamine, and its *N*-oxide, quinonoid salts (MEYER and REPPE), A., i, 236.
- 4:6:3':4'-Tetramethoxy-3-phenylchroman-2-hydroxy-. (NIERENSTEIN), T., 168.
- 4:6:3':4'-Tetramethoxy-3-phenylchroman-2-one, and its phenylhydrazones (NIERENSTEIN), T., 168.
- pp'*-Tetramethylaminodistyryl ketone (HEILBRON and BUCK), T., 1514.
- Tetramethyldiaminohydroxyisobutyric acid, ethyl ester and its benzoyl derivative (FOURNEAU), A., i, 548.
- 3:7-Tetramethylaminophenazine, preparation of (COHEN and CRABTREE), T., 2064.
- 4:4''-Tetramethyl-4'-diethyltri-amino-5''-methyltriphenylmethane (MEISENHEIMER, V. BUDKEWICZ, KANANOW, and NERESHEIMER), A., i, 359.
- 4:4':4''-Tetramethyldiethyltri-amino-triphenylmethane (MEISENHEIMER, V. BUDKEWICZ, KANANOW, and NERESHEIMER), A., i, 359.
- dimethiodide (MEISENHEIMER and NERESHEIMER), A., i, 360.
- Tetramethyldiethylene disulphide (POPE and SMITH), T., 400.
- 4:4':4''-Tetramethyldipropyltri-amino-triphenylmethane (MEISENHEIMER, V. BUDKEWICZ, KANANOW, and NERESHEIMER), A., i, 359.
- Tetramethyldipyridyl (MEYER and HOFMANN-MEYER), A., i, 739.
- Tetramethylditelluronium oxide, *diodo*-. (VERNON), T., 688.
- Tetramethylenebis- α -chloro-4:5-diaminotoluene (MORGAN and CHALLENOR), T., 1541.
- Tetramethylglucose (KARRER), A., i, 707.
- Tetramethylquinolines (MIKESKA and ADAMS), A., i, 54.
- 1:3:7:7-Tetramethyluramil (BILTZ and ZELLNER), A., i, 617.
- $\alpha\alpha\delta\delta$ -Tetraphenylbutane, $\beta\beta\gamma\gamma$ -*tetra*-bromo-, and $\beta\beta\gamma\gamma$ -*tetrachloro*-. (BRAND), A., i, 784.
- $\alpha\alpha\delta\delta$ -Tetraphenyl- $\Delta^{\alpha\beta\gamma}$ -butatriene (BRAND), A., i, 784.
- $\alpha\alpha\delta\delta$ -Tetraphenyl- $\Delta\delta$ -butenes, *By-di*-bromo-. (BRAND), A., i, 784.
- $\alpha\alpha\delta\delta$ -Tetraphenylethane, α -chloro-. (VAN LAER), A., i, 503.
- Tetraphenylethylene sulphide (STAUDINGER and SIEGWART), A., i, 43.
- 1:2:4:5-Tetraphenylhexahydro-1:2:4:5-tetrazine, 3:8-dithio-. (NAIK), T., 1169.
- Tetraphenylmethane, coloured derivatives of (KEHRMANN, RAMM, and SCHMAJEWSKI), A., i, 600.
- Tetrazole-1-benzoic acid, 5-hydroxy-. (OLIVERI-MANDALÀ), A., i, 901.
- Tetryl. See Phenylmethylnitroamine, *trinitro*-.
Thalleioquinine reaction (HART), A., ii, 359.
- Thallic salts. See under Thallium.
- Thallium, ultra-violet spark spectrum of (L. and E. BLOCH), A., ii, 3.
- vapour, refractive index of (McLENNAN), A., ii, 605.
- compound of hydrofluoric acid and (BARLOT), A., ii, 113.
- Thallium alloys, electromotive properties of (KREMANN and LOBINGER), A., ii, 157.
- with mercury, thermodynamics of (LEWIS and RANDALL), A., ii, 241.
- with potassium, electromotive properties of (KREMANN and PRESSFRIEND), A., ii, 332.
- Thallium mercury haloids (BARLOT and PERNOT), A., ii, 552.
- sulphide, equilibrium of silver sulphide with (HUBER), A., ii, 607.
- Thallic nitrite (CANNERT), A., ii, 47.
- Thallic iodide, energy of formation of (JONES and SCHUM), A., ii, 676.
- selenide and sulphide, conductivity of (PELABON), A., i, 533.
- Thallium organic compounds:—
dialkyl haloids and salts (GODDARD), T., 672.
- diethyl and dimethyl nitrophenoxides and nitrotoxyloxides (GODDARD), T., 1312.
- Thallous ferricyanide (CUTTICA and CANNERT), A., i, 322.
- Thallium estimation:—
estimation of, as chromate (CUTTICA and CANNERT), A., i, 322.
- Thallium electrode. See Electrode.
- Thallous salts. See under Thallium.
- Thebaine, reduction products of (FREUND, SPEYER, and GUTTMANN), A., i, 125; (SPEYER and FREUND), A., i, 803.

- Theobromine**, preparation of dialkyl-aminoethyl derivatives of (SOCIÉTÉ CHIMIQUE DES USINES DU RHÔNE), A., i, 126.
- phenacyl derivatives of** (MANNICH and KROLL), A., i, 884.
- sodium salicylate**, analysis of (BENNETT and WINDLE), A., ii, 527.
- distinction between caffeine and** (MALMY), A., ii, 360.
- estimation of, in cocoa** (WADSWORTH), A., ii, 225.
- Theophylline**, phenacyl derivatives of (MANNICH and KROLL), A., i, 884.
- Thermal conductivity of metals** (MEISSNER), A., ii, 480.
- expansion of liquids** (HERZ), A., ii, 374.
- reactions, radiation theory of** (LEWIS and MCKEOWN), A., ii, 623.
- and photochemical reactions** (DHAR), A., ii, 37.
- Thermosorus aurantiacus***, metabolism of (NOACK), A., i, 294.
- Thermochemical data of organic compounds** (SWIENTOSLAWSKI), A., ii, 679.
- measurements under varying conditions** (SWIENTOSLAWSKI and BŁĄSKOWSKI), A., ii, 680.
- Thermochemistry**, new data in (SWIENTOSLAWSKI), A., ii, 535.
- Thermodynamics of mixtures** (WAGNER), A., ii, 162, 301, 375.
- Thermo-elements** (FLEIDERER; FISCHER and FLEIDERER), A., ii, 296.
- Thermometer**, differential (MENZIES; MENZIES and WRIGHT), A., ii, 622.
- platinum resistance**, construction of (SLIGH), A., ii, 299.
- Thianthren**, preparation of, and *di-amino*, *dichloro*, and their derivatives (RÅY), T., 1962.
- Thianthren series**, syntheses in the (RÅY), T., 1959.
- Thianthrendicarboxylic acid** (RÅY), T., 1966.
- Thianthrendiethylhydrindene** (FLEISCHER and STEMMER), A., i, 265.
- Thianthrendiethylindanedione** (FLEISCHER and STEMMER), A., i, 264.
- Thianthrendisulphonediethylhydrindene** (FLEISCHER and STEMMER), A., i, 265.
- Thianthrendisulphonediethylindanedione** (FLEISCHER and STEMMER), A., i, 265.
- Thiazines of the naphthalene series**, synthesis of (LUDWIG-SEMEČIĆ), A., i, 448, 689.
- 2-Thienyl ketones, and their derivatives** (STRINKOFF and SCHUBART), A., i, 579.
- Thioamides** (KINDLER and FINNDORF), A., i, 509; (KINDLER and DEHN), A., i, 510.
- condensation of nitriles and** (ISHIKAWA), A., i, 728.
- Thiocarbamic acids, azides of** (OLIVERI-MANDALÀ), A., i, 990.
- Thiocarbamide**, additive compounds of azonium iodides with (SINGH and LAL), T., 210.
- Thiocarbamides, toxicity of** (HANZLIK and IRVINE), A., i, 701.
- v-s-a*-Thiocarbodiamino-*o*-hexoic acid**, and its barium and calcium salts (KODAMA), A., i, 237.
- l-s-a*-Thiocarbodiamino-*β*-phenylpropionic acid**, and its barium salt (KODAMA), A., i, 237.
- Thiocarbimide reaction** (KODAMA), A., i, 237.
- Thiocarbonic acid** :—
- Perthiocarbonic acid**, salts of (YEO-MAN), T., 38.
- tri*Thiocarbonic acid**, salts of (YEO-MAN), T., 38.
- Thiocyanates**, compounds of arsenious acid with (EPHRAÏM), A., i, 15.
- action of Grignard reagents on** (ADAMS, BRAMLET, and TENDICK), A., i, 5.
- in the animal body** (CHELLE), A., i, 208.
- estimation of, in presence of chlorides** (DUBOSC), A., ii, 718.
- Thiocyanic acid**, occurrence of, in plants (DEZANI), A., i, 643.
- ammonium salt**, equilibrium of, with ammonia and ammonium nitrate (FOOTE and BRINKLEY; FOOTE), A., ii, 441.
- o*-nitrophenylthiol ester** (LECHER and SIMON), A., i, 414.
- Thiocyano-compounds**, action of sodium arsenite on (GUTMANN), A., i, 653.
- Thiocyanogen**, molecular weight of (LECHER and GOEBEL), A., i, 853.
- Thiodiglycol**. See *ββ'*-Diethyl sulphide, dihydroxy-.
- (1) **Thionaphtha-4-oxy coumarin** (SMILES and McCLELLAND), T., 1815.
- Thionaphthenequinofluorenoneketazine** (GERHARDT), A., i, 747.
- Thionbenzoyl chloride and trisulphide** (STAUDINGER and SIEGWART), A., i, 25.
- Thiophen**, constitution of (CIAMICIAN and CIUSA), A., i, 329.
- derivatives** (SCHEBLER and SCHMIDT), A., i, 191.

- Thiophen**, halogen derivatives (STEINKOPF and OTTO), A., i, 579.
- Thiophen series** (STEINKOPF and SCHUBART), A., i, 579.
- Thiophenmercuri-salts**, and bromo-, chloro-, and iodo- (STEINKOPF), A., i, 681.
- Thiouram disulphides**, use of, in vulcanisation of caoutchouc (ROMANI), A., i, 576.
- toxicity of** (HANZLIK and IRVINE), A., i, 701.
- Thioureas**. See Thiocarbamides.
- Thorium**, corpuscular spectrum of (M. and L. BROGLIE), A., ii, 615.
- Thorium hydride** (KLAUBER and v. MELLENEHEIM), A., ii, 206.
- hydride, gaseous, existence of (SCHWARZ and KONRAD), A., ii, 645.
- double metaphosphate and sulphate (LINDSAY LIGHT CO.), A., ii, 266.
- Thorium-B and -C**, volatilisation of, from gold (LORIA), A., ii, 294.
- adsorption of, by ferric hydroxide (CRANSTON and BURNETT), T., 2036.
- Thorium-C**, disintegration of (RUTHERFORD), A., ii, 293; (WOOD), A., ii, 294; (ALBRECHT), A., ii, 675.
- range and ionisation of α -particles from (HENDERSON), A., ii, 617.
- Thorium-C and -C'**, number and range of the recoil atoms of (KOLHÖRSTER), A., ii, 149.
- Thrombozyme**, preparation of (NOLF), A., i, 634.
- Thujamenthone**, derivatives of (GODCHOT), A., i, 329.
- Thymol**, preparation of urethanes of (SHERK), A., i, 239, 340.
- Thymos-nucleic acid**, structure of, and its relation to yeast-nucleic acid (LEVENE), A., i, 821.
- hydrolysis of, with picric acid (THANNHAUSER and OTTENSTEIN), A., i, 521.
- Tin**, allotropy of (SPENCER), A., ii, 266.
- valency scale of (WÖHLER and BALZ), A., ii, 633.
- interpenetration of copper and (WEISS and LAPITTE), A., ii, 551.
- precipitation of, by iron (BOUMAN), A., ii, 134.
- action of phenol with (ZOLLER), A., i, 238.
- Tin alloys with antimony and copper**, electro-analysis of (FÖRSTER and AANSENSEN), A., ii, 350.
- with bismuth and lead (WÜRSCHMIDT), A., ii, 648.
- with copper, constitution of (HAUGH-TON), A., ii, 641.
- Tin alloys with lead**, electrical resistance of (KONNO), A., ii, 425.
- with mercury, volume changes of (KÖLLER), A., ii, 341.
- with potassium, electromotive properties of (KREMANN and PRESZ-FREUND), A., ii, 332.
- with sodium, electromotive properties of (KREMANN and GNACHL-PANMER), A., ii, 158.
- with thallium, electromotive properties of (KREMANN and LOBINGER), A., ii, 157.
- Tin (tetrachloride, anhydrous, preparation of** (TAYERNE), A., ii, 51.
- Stannous sulphide**, identity of β -tin with (SPENCER), A., ii, 266.
- Stannic chloride**, compound of, with phenyldimethylarsine (BURROWS and TURNER), T., 1449.
- Stannic acid**, electrical properties of suspensions of (VARGA), A., ii, 371.
- colloidal, time change of, after treatment with alkali hydroxide (STIEGLER), A., ii, 577.
- Tin organic compounds** (DRAKE), T., 758.
- Tin detection, estimation, and separation**—
- detection of (BRESSANIN), A., ii, 464.
- estimation of, volumetrically (VELCHE), A., ii, 658.
- estimation of, in cassiterite (CORTI), A., ii, 416.
- estimation of, and its separation from antimony in presence of phosphoric acid (MOURET and BARLOT), A., ii, 597.
- estimation of, and its separation from arsenic and antimony (HAHN and PHILIPPI), A., ii, 524.
- separation of, from antimony (LUFF), A., ii, 353.
- separation of, from silicon, titanium and zirconium (WENGER and MOREL), A., ii, 464.
- Tissues**, treatment of, with halogens (Lo MONACO), A., i, 216.
- animal. See Animal tissues.
- detection of albumoses in (ACHARD and FEUILLIE), A., i, 380.
- estimation of chlorides in (BELL and DOISY), A., ii, 272.
- Titanium** (BILLY), A., ii, 553.
- arc spectra of (KIESS and MEGERS), A., ii, 4.
- Titanium hydride** (KLAUBER), A., ii, 211.
- peroxide (BILLY), A., ii, 456.
- Titanous salts**, use of, in volumetric analysis (THORNTON and CHAPMAN), A., ii, 279.

Toluene compounds, Me = 1.
Titanium estimation and separation :—
 estimation of (NAKAZONO), A., ii, 598.
 estimation of, in iron and steel (DIECKMANN), A., ii, 597.
 separation of, from silicon, tin, and zirconium (WENGER and MOREL), A., ii, 464.
Törnebohmit (GEIJER), A., ii, 762.
Toluene, preparation of, from turpentine (MAHOOD), A., i, 116.
 surface tension of (RICHARDS and CARVER), A., ii, 384.
 vapour tension and molecular volume of mixtures of benzene and (SCHULZE), A., ii, 378.
 effect of light on the bromination of (SWENSSON), A., ii, 291.
 sulphonation of, with chlorosulphonic acid (HARDING), T., 1261.
Toluene, chloro-derivatives, manufacture of (BRITISH DYE STUFFS CORPORATION, LTD., GREEN, and CLIBBENS), A., i, 853; (BRITISH DYE STUFFS CORPORATION, LTD., GREEN, and HERBERT), A., i, 854.
 3-chloro-2,4-dinitro-, and 3-iodo-2,4-dinitro- (BRADY and BOWMAN), T., 897.
o-difluorochloro- (SWARTS), A., i, 657.
o-trifluoro-*m*-nitro- (SWARTS), A., i, 657.
 trinitro-, products of detonation of (MUNROE and HOWELL), A., i, 18.
 trinitro-, reduction of (BIELOUSS), A., i, 712.
 trinitro-, additive compounds of, with *p*-aminoacetophenone and with *p*-aminoazobenzene (GIUA and ANGELETTI), A., i, 557.
 trinitro-, poisoning by (LEWIN), A., i, 640.
 β - and γ -trinitro-, action of *as*-phenylmethylhydrazine on (GIUA), A., i, 198.
 2,3,6-trinitro- (GIUA), A., i, 712.
 2,4,6-trinitro-, vapour pressure of (MENZIES), A., ii, 17.
 toluenes, *o*-chlorodinitro- (MORGAN and JONES), T., 187; (MORGAN and CHALLENGER), T., 1537; MORGAN and GLOVER), T., 1790.
 nitro- (BELL, CORDON, SPRY, and WHITE), A., i, 234; (BELL and CORDON; BELL and SPRY), A., i, 330.
 dinitro-, partial reduction of (BURTON and KENNER), T., 1047.
p-Toluenesulphonic acid, adsorption of, by the nervous system (HÜSGEN), A., i, 145.

Toluene compounds, Me = 1.
p-Toluenearzo-1,3-diketohydrindene (DAS and GHOSH), A., i, 697.
Toluene-2,4-disulphonic acid, di-*p*-toluidine salt (VAN DUIN), A., ii, 221.
3-*p*-Toluenesulphaminó- α -naphthoquinone-2-pyridinium anhydride (ÜLLMANN and ETTISCH), A., i, 270.
p-Toluenesulphinic acid, benzene-diazonium ester (DUTT, WHITEHEAD, and WORMALL), T., 2089.
o- and *p*-Toluenesulphonamides, separation of (HERZOG and KREIDL), A., ii, 357.
Toluene-*o*-sulphonic acid, *p*-nitro- (OSAKYHTIÖ), A., i, 168.
 preparation of, from cymene (HINTIKKA), A., i, 332.
Toluene-*p*-sulphonic acid, crystallography of substituted amides of (JAEGER), A., i, 18.
n-propyl ester (HAHN and WALTER), A., i, 652.
Toluene-*o*- and -*p*-sulphonic acids, and 2,6-dinitro-, aniline and *p*-toluidine salts (VAN DUIN), A., ii, 221.
o-Toluenesulphonyl chloride, 6-chloro-, and 6-chloro-3- and -4-nitro-, and their salts and derivatives (DAVIES), T., 878.
p-Toluenesulphonyl chloride, 2-chloro-, preparation and nitration of (DAVIES), T., 860.
 2-chloro-5-nitro-, and its salts and derivatives (DAVIES), T., 884.
 2,6-dichloro-, and 2-chloro-6-nitro-, and their salts and derivatives (DAVIES), T., 870.
o- and *p*-Toluenesulphonyl chlorides, melting points of mixtures of (HARDING), T., 260.
p-Toluenesulphonyl-*p*-anisidide (HALBERKANN), A., i, 661.
p-Toluenesulphonylbenzenesulphonic acid, ethyl ester, amide and nitrile (TRÖGER and BERNDT), A., i, 745.
Toluene-*p*-sulphonyl-*p*-chloroanilide, acetyl derivative (HALBERKANN), A., i, 781.
p-Toluenesulphonyl-*p*-ethoxybenzenesulphonic acid, ethyl ester, amide and nitrile (TRÖGER and BERNDT), A., i, 745.
p-Toluenesulphonylmethoxybenzenesulphonic acid, ethyl esters, amides and nitriles (TRÖGER and BERNDT), A., i, 745.
p-Toluenesulphonylmethylaniline-*p*-sulphonic acid, sodium salt (HALBERKANN), A., i, 780.
N-*p*-Toluenesulphonylmethyl-*p*-anisidide (HALBERKANN), A., i, 661.

Toluene compounds, Me = 1.

- p*-Toluenesulphonylmethyl-*p*-chloroanilide (HALBERKANN), A., i, 781.
p-Toluenesulphonylmethyl- α -naphthylamide (KÖNIG and KÖHLER), A., i, 459.
N-*p*-Toluenesulphonylmethyl-*p*-toluidide (HALBERKANN), A., i, 780.
N-*p*-Toluenesulphonyl- α -naphthaquinonephenoxazine (ULLMANN and ETTISCH), A., i, 270.
Toluene-*p*-sulphonyl-1:4-naphthylenediamine (MORGAN and GRIST), T., 604.
1-Toluene-*p*-sulphonyl-1:2- and -1:4-naphthylenediaminesulphonic acids (MORGAN and GRIST), T., 608.
Toluene-*p*-sulphonyl-*p*-nitroanilide (HALBERKANN), A., i, 780.
Toluene-*p*-sulphonyl-*p*-sulphonanilide, pyridine salt (HALBERKANN), A., i, 780.
p-Toluenesulphonyltoluenesulphonic acids, ethyl esters, amides and nitriles (TRÖGER and BERNDT), A., i, 745.
p-Toluenesulphonyl-*as*-*m*-xyleneacetio acid, ethyl ester, amide and nitrile (TRÖGER and BERNDT), A., i, 745.
o-Toluic acid, 3-chloro-, and its derivatives (KENNER and WITHAM), T., 1458.
m-Toluic acid, 5-amino-6-hydroxy-, methyl ester, 5-nitro-6-hydroxy-, and its methyl ester (PEISER), A., i, 345.
4:6-dibromo-, and its salts and derivatives (ECKERT and SEIDEL), A., i, 863.
p-Toluic acid, 8-naphthyl ester (ÖSTLING), A., i, 344.
p-Toluic acid, 3:5-dibromo-, methyl ester (BUNING), A., i, 520.
m-Toluidine, 6-chloro-2:4-dibromo-, (DAVIES), T., 866.
2-chloro-4-nitro- (MORGAN and GLOVER), T., 1704.
6-chloro-4-nitro-, preparation of (MORGAN, CHALLENGER, and JONES), T., 1544.
2-nitro- (BURTON and KENNER), T., 1052.
p-Toluidine, solubility of, in caoutchouc mercuroacetate of (VECCHIOTTI), A., i, 902.
p-Toluidine, 2-chloro-3:5-dinitro- (DAVIES), T., 868.
m-Toluidinoacetophenone, *p*-2':6'-dinitro- (GIUA and GIUA), A., i, 859.
m-Toluidinobenzoic acid, dinitro-derivatives (GIUA and GIUA), A., i, 859.

Toluene compounds, Me = 1.

- p*-Toluidino-4:5-dimethoxyphthalonic acid, *p*-toluidine salt (FARGHER and PERKIN), T., 1789.
p-Toluidinomethylceramidone, hydrate (BADISCHE ANILIN- & SODA-FABRIK), A., i, 361.
p-Toluidino-*m*-opianic acid (FARGHER and PERKIN), T., 1789.
 β -*p*-Toluidino-8-phenylethane, α -bromo- α -nitro-, and its derivatives (WOLFE and RALL), A., i, 411.
m-Toluidine-4-sulphonic acid, 6-chloro- (DAVIES), T., 865.
Tolunaphthol. See *p*-Toluic acid, 8-naphthyl ester.
p-Toluoyle chloride, 3:5-dibromo- (BRYNG), A., i, 520.
Toluoylebenzoic acid, tetrachloro- (ECKERT and ENDLER), A., i, 871.
p-Toluoyleformic acid, methylamide (ADAMS, BRAMLET, and TENDICK), A., i, 6.
p-Toluoylehydrazide, 3:5-dibromo- (BRYNG), A., i, 520.
o-2:5-Toluoquinone-5'-bromo-3'-hydroxy-*p*-tolylimide, 3-bromo-4-amino- (v. AUWERS, BORSCHKE, and WELKE), A., i, 573.
m-2:5-Toluoquinone-3'-hydroxy-*p*-tolylimide, 4-amino-, and its derivative (v. AUWERS, BORSCHKE, and WELKE), A., i, 573.
m-Tolyl methyl ether, 5-bromo- (v. AUWERS, BORSCHKE, and WELKE), A., i, 572.
tr-nitro-, additive compounds of, with pyridine and quinoline (GRI and GIUA), A., i, 593.
p-Tolyl β -chloroethyl sulphide and sulphoxide (FROMM and KORN), A., i, 243.
 β -hydroxyethyl sulphide and sulphoxide, and their derivatives (FROMM and KORN), A., i, 242.
 β -iodoethyl sulphide (FROMM and KORN), A., i, 243.
methyl sulphide (WEDEKIND and SCHENK), A., i, 664.
9-*o*- and -*p*-Tolylamino-9:10-dihydroanthracenes (BARNETT and COOK), T., 910.
3-*p*-Tolyl-5-anilinomethylene-2:4-thiozoleidone (DAINS, IRVIN, and HART), A., i, 362.
Tolylazides, action of, with hydrotelluric acid and with ethyl and methyl alcohols, phenol, and sulphuric acid (BAMBERGER), A., i, 718.
p-Tolylazo- β -chlorophenolphthalein (CONSONNO and APOSTOLO), A., i, 346.

Toluene compounds, Me = 1.

- m*-Tolylazoisimide, 2:4-dinitro- (BRADY and BOWMAN), T., 898.
- 1-Tolylbenzoxazoles, 5-hydroxy- (HENRICH and OFFERMANN), A., i, 887.
- 3-*p*-Tolyl-5-benzylidene-2:4-thiazolidione (DAINS, IRVIN, and HARREL), A., i, 362.
- m*-Tolyl benzyl ketone, 4-hydroxy-, and its derivatives (v. AUWERS), A., i, 118.
- m*-Tolyl α -bromobenzyl ketone, 4-hydroxy- (v. AUWERS), A., i, 119.
- o*-Tolyl isobutenyl ketone, *p*-hydroxy-, derivatives of (v. AUWERS), A., i, 466.
- o*- and *m*-Tolylcarbamides (DAINS and WERTHEIM), A., i, 61.
- p*-Tolyl dichlorobismuthine (CHALLENGER and ALLPRESS), T., 917.
- p*-Tolyl β -chloroethylsulphone (FROMM and KOHN), A., i, 243.
- 3:4-Tolylene diamine, 2-chloro- (MORGAN and GLOVER), T., 1706.
- p*-Tolylfurylcamphorylmethane (WOLFF), A., i, 514.
- m*-Tolylhydrazine, 6-nitro-4-cyano-, and its acetyl derivative (BORSCHKE), A., i, 460.
- Tolylhydrazines, dinitro- (BRADY and BOWMAN), T., 894.
- p*-Tolyl β -hydroxyethylsulphone, and its benzoate (FROMM and KOHN), A., i, 242.
- Tolylhydroxylamines, action of, with ethyl and methyl alcohols and sulphuric acid (BAMBERGER), A., i, 718.
- m*- and *p*-Tolylidenesalicylidene-*o*-phenylenediamines (GALLAGHER), A., i, 715.
- 2-Tolylimino-3-tolyl-4-thiazolidones, and their derivatives (DAINS, IRVIN, and HARREL), A., i, 362.
- m*-Tolyl 4-methoxystyryl ketone, 4-hydroxy-, and its derivatives (v. AUWERS and ANSCHÜTZ), A., i, 682.
- 1-Tolyl-5-methylbenzoxazoles (HENRICH and MATULKA), A., i, 889.
- Tolylmethylnitroamine, 2:4- and 4:6-di- and 2:4:6-tri-nitro- (BRADY and GIBSON), T., 98.
- Tolylmethylnitrosoamines, di- and tri-nitro- (BRADY and GIBSON), T., 103.
- 1-*o*- and *p*-Tolyl-5-methylpyrrolidones (EMMERT and MEYER), A., i, 268.
- 3-*p*-Tolyl-5- β -naphthylaminomethylene-2:4-thiazolidione (DAINS, IRVIN, and HARREL), A., i, 362.
- Tolylloxalimino-chloride (STAUDINGER, GOLDSTEIN, and SCHLENKER), A., i, 435.
- Tolylloxalyl chlorides (STOLLÉ and KNEBEL), A., i, 578.

Toluene compounds, Me = 1.

- Tolylloxalylanilides (STOLLÉ and KNEBEL), A., i, 578.
- Tolylloxides, metallic, and their thermal decomposition (FISCHER and EHRLHARDT), A., i, 412.
- Tolylloxides, nitro-, metallic derivatives of (D. and A. E. GODDARD), T., 2044.
- β -*m*-Tolylloxycinnamic acid, 6-chloro-, and its ethyl ester (RUHEMANN), A., i, 431.
- o*-Tolyl propenyl ketone, *p*-hydroxy-, semicarbazidesemicarbazone (v. AUWERS), A., i, 466.
- 1-Tolyl-4-pyridones, and their salts (SMIRNOV), A., i, 595.
- o*-Tolyl β -semicarbazidoisobutyl ketone, *p*-hydroxy-, and its oxime (v. AUWERS), A., i, 466.
- 1-*o*-Tolyltetrazole-5-sulphonic acid, and its potassium salt (OLIVERI-MANDALÀ), A., i, 900.
- 1-*o*-Tolyltetrazole-5-thiol (OLIVERI-MANDALÀ), A., i, 900.
- o*-Tolylthiocarbamic acid, azide of (OLIVERI-MANDALÀ), A., i, 900.
- o*-Tolylthiocarbamide (OLIVERI-MANDALÀ), A., i, 900.
- α -*m*-Tolylthiolpropionic acid, 5-bromo- (v. AUWERS and THIES), A., i, 121.
- α -*p*-Tolylthiolpropionic acid (v. AUWERS and THIES), A., i, 121.
- Topochemical reactions (KOHLSCHÜTTER and NAGELI), A., ii, 258.
- Toxicity and osmotic pressure of soluble salts in soils (GREAVES and LUND), A., i, 758.
- Tragacanth ethyl ether (LILIENFELD), A., i, 650.
- Transmutation of elements, attempts at (BRINER), A., ii, 635.
- Transport numbers, apparatus for determination of, of colloids (STEIGMANN), A., ii, 13.
- Triacetoxymercuriphenolphthalein (WHITE), A., i, 71.
- Triacetylcholic acid (WIELAND and BOERSCH), A., i, 179.
- Triacetylquinide (FISCHER and AUGER), A., i, 419.
- Tri-*p*-anisylacetaldehyde, and its derivatives (OREKHOFF and TIFFENEAU), A., i, 566.
- s*-Tri-*p*-anisylbenzene (SCHNEIDER and SEEDACH), A., i, 859.
- $\alpha\alpha\beta$ -Tri-*p*-anisylethane- $\alpha\beta$ -diol (OREKHOFF and TIFFENEAU), A., i, 566.
- Tri-*p*-anisylloxazole (SCHÖNBERG and ROSENTHAL), A., i, 272.
- 2:4:6-Tri-*p*-anisylpyridine, and its salts (DILTHEY and others), A., i, 787.

- Tri-*o*-anisyltelluronium salts (LEDERER), A., i, 108.
- 4'-Triazo-1-phenyl-5-methylbenzothiazole (MORGAN and WEBSTER), T., 1074.
- Tribenzoyl-2-amino-1:8-dihydroxynaphthalene (HELLER and KRETZSCHMANN), A., i, 459.
- Tribenzoyl-*p*-aminophenylhydrazine (FRANZEN and STEINFÜHRER), A., i, 463.
- apo*Tricyclol, and its derivatives (LIPP and PADBERG), A., i, 559.
- Tricycloylapotricyclylcarbamide (LIPP and PADBERG), A., i, 559.
- apo*Tricycylamine, and its salts (LIPP and PADBERG), A., i, 560.
- apo*Tricycylcarbamide (LIPP and PADBERG), A., i, 560.
- apo*Tricycylcarbimide (LIPP and PADBERG), A., i, 560.
- apo*Tricycylmethy lurethane (LIPP and PADBERG), A., i, 559.
- Tri(diethylaminomethyl) glyceryl ether (MCLEOD and ROBINSON), T., 1473.
- Tridymite, formation of, from quartz (REBUFFAT), A., ii, 44.
- Triethylarsine bromocyanide and hydroxybromide (STEINKOFF and MÜLLER), A., i, 404.
- Triglycines, unsymmetrical, synthesis of (BERGMANN, BRAND, and DREYER), A., i, 444.
- Trigonalite from Sweden (FLINK), A., ii, 263.
- γ-*c*-Trimethyl-α-*D*-acetoneglucose (LEVENE, MEYER, and WEBER), A., i, 846.
- 1:3:8-Trimethylallantoin (BILTZ and MAX), A., i, 895.
- Trimethyl-β-aminoethylammonium salts (GABRIEL), A., i, 59.
- Trimethylammoniohexoic acid, *c*-hydroxy-, and its aurichloride (ACKERMANN and KUTSCHER), A., i, 499.
- Trimethylammoniovaleric acid, *δ*-hydroxy-, and its aurichloride (ACKERMANN and KUTSCHER), A., i, 499.
- Trimethylbarbituric acid (BILTZ and WITTER), A., i, 455.
- α-1:1':4'-Trimethylbenzodioxazole (HENRICH and ROSSTEUSCHER), A., i, 883.
- 1:4:5-Trimethyl-1-dichloromethylcyclohexen-2-ones (V. AUWERS and ZIEGLER), A., i, 114.
- 1:2:4-Trimethylcoumarone (V. AUWERS), A., ii, 73.
- 1:3:5-Trimethyl-2:4-diethylbenzene and its 6-acetyl derivative (PHILIPPI and RIE), A., i, 729.
- 1:7:9-Trimethyl-4:5-dihydrouric acid, 4:5-dichloro- (BILTZ and KRZIKALLA), A., i, 610.
- 1:2:2-Trimethyl-1:3-dimethanocyclobutane (ÖSTLING), A., i, 666.
- 1:2:2-Trimethyl-1:3-dimethanocyclopentane (ÖSTLING), A., i, 665.
- 1:4-*endo*Trimethylene-6-methyltetrahydroquinoxaline, and its salts (MOORE and DOUBLEDAY), T., 1174.
- Trimethyleneperoxideazina. See 4-Methyleneamino-3:5-dihydro-1:2:4-dioxazole.
- Trimethylethyluric acids (BILTZ and MAX), A., i, 131.
- Trimethylglucosan, preparation of (IRVINE and OLDHAM), T., 1754.
- Trimethylglucose (KARNER), A., i, 707.
- N*-Trimethylglutamic acid, and its aurichloride (ACKERMANN and KUTSCHER), A., i, 499.
- Trimethyl-β-methylglucoside (IRVINE and OLDHAM), T., 1758.
- γ-*c*-Trimethylmethylglucoside (LEVENE, MEYER, and WEBER), A., i, 846.
- Trimethylphoretin, crystalline (DE ANGELIS), A., i, 731.
- Trimethylphosphine, preparation of, and its selenide (RENSHAW and BELL), A., i, 404.
- Trimethyl-β-phthalimidoeethylammonium salts (GABRIEL), A., i, 59.
- 1:2:3-Trimethyl-4-isopropylcyclopentane (GODCHOT), A., i, 329.
- 1:2:3-Trimethyl-4-isopropylcyclopentenes (GODCHOT), A., i, 329.
- 2:3:6-Trimethylpyrid-4-one, and its platinumchloride (PHILIPPI and SEKA), A., i, 429.
- 2:3:6-Trimethylpyrone (PHILIPPI and SEKA), A., i, 429.
- 2:4:6-Trimethylquinoline, salts of (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- Trimethylsaccharolactonic acid, and its ethyl ester lactone (IRVINE and OLDHAM), T., 1757.
- N*-Trimethylserine and its aurichloride (ACKERMANN and KUTSCHER), A., i, 499.
- 2:4:6-Trimethyltetrahydroquinoline, salts and derivatives of (FISCHER, SCHEIBE, MERKEL, and MÜLLER), A., i, 55.
- 1:3:9-Trimethyl-8-thiouric acids (BILTZ, STRUFE, TOPP, HEYN, and ROBL), A., i, 612.
- 1:3:5-Trimethyl-2:4:6-triethylbenzene (PHILIPPI and RIE), A., i, 729.
- 1:7:9-Trimethyluric acid, and its derivatives (BILTZ and KRZIKALLA), A., i, 609.
- 1:3:9-Trimethyl-ψ-uric acid (BILTZ and STRUFE), A., i, 614.

- 1:3:7-Trimethyl- ψ -uric acid, 5-chloro- (BILTZ and ZELLNER), A., i, 611.
- 1:3:9-Trimethyl- Δ^4 -isouric acid, 4-chloro- (BILTZ and STRUFE), A., i, 614.
- 1:3:9-Trimethyl- Δ^7 -isoxanthine (BILTZ, STRUFE, TOPP, HEYN, and ROEL), A., i, 612.
- 1:3:9-Trimethylisoxanthine, 8-bromo- (BILTZ and STRUFE), A., i, 613.
- Trimonoallylamine (STOCK and SOMIESKI), A., ii, 400.
- Tri- α -naphthylarsine, and its dihydroxide and sulphide (ZUCKERKANDL and SINAI), A., i, 902.
- Trioxymethylene, transformations of (CONTARDI), A., i, 93.
- Triphenarsazinamine (WIELAND and RHEINHEIMER), A., i, 373.
- Triphenarsazine chloride (WIELAND and RHEINHEIMER), A., i, 373.
- Triphenylarsine diiodide (STEINKOFF and SCHWEN), A., i, 696.
- 3-Triphenylbenzene, *tri-p*-hydroxy-, and its triacetate (SCHNEIDER and SEEBACH), A., i, 859.
- 756-Triphenyl- α -*p*-chlorophenyl- α -diketopentane (DILTHEY, BAURIEDEL, GEISELBRECHT, SEEGER, and WINKLER), A., i, 190.
- Triphenylethylene sulphide, chloro- (STAUDINGER, SIEGWART, ANTHES, BOMMER, and GERHARDT), A., i, 44.
- 229-Triphenylhexan- α -ol (BILLARD), A., i, 566.
- Triphenylhydrazinomethane trihydrochloride (BARNETT), A., i, 692.
- Triphenylmethane colouring matters, photochemical changes in (LIFSCHITZ and JOFFE), A., ii, 365.
- Triphenylmethane series (MEISENHEIMER, v. BUDKEWICZ, and KANANOW), A., i, 356; (MEISENHEIMER, v. BUDKEWICZ, KANANOW, and NERESHEIMER), A., i, 358; (MEISENHEIMER and NERESHEIMER), A., i, 359.
- Triphenylmethylarsonium triiodide (STEINKOFF and SCHWEN), A., i, 696.
- 228-Triphenylpentan- α -ol (BILLARD), A., i, 565.
- Triphenylphosphine bromocyanide and hydroxybromide (STEINKOFF and BUCHHEIM), A., i, 470.
- 2:4:6-Triphenylpyran, and its disemicarbazone (DILTHEY, BAURIEDEL, GEISELBRECHT, SEEGER, and WINKLER), A., i, 189.
- 2:4:6-Triphenylpyridine, *tri-p*-hydroxy-, and its salts and derivatives (DILTHEY and others), A., i, 737.
- 2:4:6-Triphenylpyrylium iodide (SCHNEIDER and SEEBACH), A., i, 878.
- Triphenylvinyl alcohol, constitution of (MCKENZIE and BOYLE), T., 1131.
- desmotropy of (MEYER and GOTTLIEB-BILLROTH), A., i, 422.
- Triphosphonocetic acid, deamidisation of (THANNHAUSER and SACHS), A., i, 201.
- Triplite, analysis of (SHANNON), A., ii, 458.
- Triguinolylcarbinol, and its pierate (SCHEIBE and ROSSNER), A., i, 63.
- Tri-2-quinolymethane, and its salts and derivatives (SCHEIBE and ROSSNER), A., i, 62, 451.
- Trisazorybenzene (CUSMANO), A., i, 133.
- Trisulphidobisbenzanilide (NAIR), T., 1169.
- Trithionic acid. See under Sulphur.
- Tri- α -tolylbismuthine (CHALLENGER and ALLPRESS), T., 920.
- Tri-*p*-tolylloxazole (SCHÖNBERG and ROSENTHAL), A., i, 272.
- Trochol, and its esters (YANAGISAWA), A., i, 750.
- Tropinone, synthesis of (WILLSTÄTTER and BOMMER), A., i, 122.
- Trouton's rule and critical energy increment (RIDEAL), A., ii, 484.
- Truxillic acids (STOERMER and LAAGE), A., i, 179, 182; (STOERMER and SCHOLTZ), A., i, 180.
- β -Truxinic acid, ammonium salt (STOERMER and LAAGE), A., i, 180.
- γ -Truxinic acid, and its salts and derivatives (STOERMER and SCHOLTZ), A., i, 180.
- Trypanocidal agents, experiments with (HÄHNDEL and JOETTEN; MAYER and ZEISS; WENYON), A., i, 908.
- Trypanosomes, experiments on, with "Bayer 205" (HÄHNDEL and JOETTEN; MAYER and ZEISS; WENYON), A., i, 908.
- Trypsin, digestion of fibrin and caseinogen by (EDIE), A., i, 750.
- hydrolysis of gelatin by (NORTHROP), A., i, 823.
- Tryptophan, acid hydrolysis of (HOLM and GORTNER), A., i, 65.
- resistance of, to hydrolysis by barium hydroxide (ONSLow), A., i, 693.
- colour changes in solutions of (MATTHEW and WILLIAMS), A., i, 641.
- decomposition of, by bacteria (RAISTRICK and CLARK), A., i, 479.
- estimation of, colorimetrically (v. FÜRTH and NOBEL), A., i, 74; (v. FÜRTH and LIEBEN), A., i, 820, 828; ii, 71.
- estimation of, in proteins (THOMAS; v. FÜRTH and LIEBEN), A., i, 64.

Tungsten, arc spectra of (KIESS and MEGGERS), A., ii, 4.
L-series spectrum of (SMEKAL), A., ii, 615; (DAUVILLIER), A., ii, 669.
 Röntgen-ray spectrum of (DUANE and PATTERSON), A., ii, 363.
 valency scale of (WÖHLER and BALZ), A., ii, 633.
Tungsten alloys with lead (INOUE), A., ii, 205.
 with nickel (VOGEL), A., ii, 512.
Tungsten organic compounds (BENNETT and TURNER), A., i, 472.
Turbidimeter, use of, in place of the nephelometer (DENIS), A., ii, 555.
Turpentine, thermal decomposition of (MAHOOD), A., i, 116.
 detection and estimation of coal-tar oil in (GROTLISCH and SMITH), A., ii, 659.
Turpentine oil, constituents of (PARISELLE), A., i, 574.
 French, composition of (VÈZES), A., i, 427.
Typha latifolia (cat-tail), carbohydrates in the roots of (JENCKS), A., i, 913.
Tyrosinase, colloidal chemistry of the reaction for (HÄHN), A., ii, 579.
 detection of (HÄHN), A., ii, 528.
Tyrosine, action of bacteria on (OTSUKA; HIRAI), A., i, 291; (RAISTRICK and CLARK), A., i, 479.
 estimation of, colorimetrically (THOMAS), A., ii, 607.
L-Tyrosine, 3-amino-, and 3-nitro-, and its hydrochloride (WASER and LEWANDOWSKI), A., i, 788.

U.

Ultra-filtration apparatus (VILLEGAS), A., ii, 29; (KNAFF-LENZ), A., ii, 93.
Undecamethylenedicarboxylic acid, from oxidation of oleic acid (LIFSCHÜTZ), A., i, 496.
Unimolecular reactions, theory of (TOLMAN), A., ii, 248.
Unsaturated compounds (GIUA and BAGIELLA), A., i, 730.
 formation of, from halogenated open-chain derivatives (INGOLD), T., 305, 951; (FARMER and INGOLD), T., 2001.
 formation of molecular compounds by (MAASE and RUSSELL), A., i, 701.
 molecular rearrangement of (GILLET), A., i, 533, 781.
 chemical and pharmacological characteristics of (v. BRAUN and BRAUNSDORF), A., i, 772.
Unsaturated compounds, action of alkaline hydrogen peroxide on (WEITZ and SCHEFFER), A., i, 863.
 bromination of (WOHL and JASCHKOWSKI), A., i, 317.
 action of nitrogen oxides on (WIELAND), A., i, 552; (WIELAND and BLÜMICH), A., i, 552, 554; (WIELAND and REINDEL), A., i, 553.
 action of nitroso-derivatives on (ALESSANDRI), A., i, 730.
 with carbon double bonds, additive products of, with acids (KEHRMANN and EFFRONT), A., i, 348.
Uraeil, reduction of (JOHNSON and BROWN), A., i, 806.
Uramil, thio-, behaviour of, in the animal organism (FREISE), A., i, 207.
Uranium, arc spectra of (KIESS and MEGGERS), A., ii, 4.
 absorption spectrum of (MOIR), A., ii, 670.
 corpuscular spectrum of (M. and L. DE BROGLIE), A., ii, 615.
L-series spectra of (DAUVILLIER), A., ii, 421.
 disintegration of (SMEKAL), A., ii, 149.
Uranium compounds, preparation of pure (WILKE-DORFURT), A., ii, 205.
Uranium detection, estimation, and separation—
 detection of, and its separation from chromium and vanadium (BROWNING), A., ii, 279.
 estimation of (NAKAZONO), A., ii, 714.
 estimation of, and its separation from zirconium (ANGELETTI), A., ii, 524.
Uranium-Z (HAHN), A., ii, 478, 479; (NEUBURGER), A., ii, 479.
Urazole, iminothio-, and dithio-, and their salts and derivatives (ARNET and MILDE), A., i, 814.
Urea (carbamide), formation of, in the liver (FOSSE and ROUCHELMAN), A., i, 382.
 distribution of, in the animal organism (GAD-ANDRESEN), A., i, 832.
 rate of excretion of (AUSTIN, STILLMAN, and VAN SLYKE), A., i, 383.
 excretion of, by the kidneys (NAGAYAMA), A., i, 205.
 estimation of (LAUDAT; KENNAWAY), A., ii, 70; (AMBARD), A., ii, 224; (FUSCKE), A., ii, 468.
 apparatus for estimation of (TERWES), A., ii, 70.
 estimation of, in blood (LAUDAT), A., ii, 223; (WATSON and WHITE), A., ii, 358; (FEIGL), A., ii, 359.
 estimation of, in fertilisers (JOHNSON), A., ii, 605.

- Urea**, estimation of, in physiological fluids (STROHMANN and FLINTZER), A., ii, 664.
 estimation of, in urine (DOUBLET and LESCEUR), A., ii, 70; (STENLE; PHILIBERT), A., ii, 605.
 See also Carbamide.
- Urease**, effect of poisons on the action of (RONA and GYÖRGY), A., i, 69.
 synthesis of carbamide by (MATTAAR; BARENDRECHT), A., i, 203.
 from *Canavalia* (WESTER), A., i, 469.
 soya-bean, action of β -3-dihydroxy-ethyl sulphide and its derivatives on (RONA and PETOW), A., i, 69.
 action of, on the animal organism (CARNOT, GERARD, and MOISSONNIER), A., i, 288.
- Urethanes**, substituted, action of ammonia and amines on (DAINS and WERTHEIM), A., i, 61.
- p*-Urethano-benzoic acid**, ethyl ester (THOMAS and RITSERT), A., i, 344.
- α -Urethano- α -*p*-chlorophenylbutyric acid**, ethyl ester (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618.
- α -Urethano- α -piperonylpropionic acid**, methyl ester (CHEMISCHE FABRIK VON F. HEYDEN), A., i, 618.
- Uric acid** in blood of the liver (CHAUFARD, BRUDIN, and GRIGAUT), A., i, 288.
 acidity of the hydrogen atoms in (BILTZ and HERRMANN), A., i, 691.
 metallic salts, preparation and properties of (CURTMAN and HART), A., i, 619.
 estimation of, in blood (ZALESKI and SACHNOVSKA), A., ii, 226; (OSERACKI), A., ii, 227; (BIFFI), A., ii, 664.
 estimation of, in urine (THIERY), A., ii, 527.
- ψ -Uric acid**, thio-, behaviour of, in the animal organism (FREISE), A., i, 207.
- Uric acids**, and their derivatives (BILTZ), A., i, 606.
- Uric acid-4:5-glycol dimethyl ether**, stability of (BILTZ and MAX), A., i, 895.
- Uricase** in plants (NEMEC), A., i, 213.
- Urine**, formation of acetone in (PITTARELLI), A., i, 266.
 amino-nitrogen in (CIACCO), A., i, 834.
 elimination of calcium in (SCHIFF and STRANSKY), A., i, 381.
 occurrence of chlorine compounds in (CAMERON and HOLLNBERG), A., i, 78.
 proteolytic enzymes in (HEDIN), A., i, 551.
 pentoses in (JUSTIN-MCELLER), A., ii, 416.
- Urine**, pigments of (WEISS), A., i, 136.
 excretion of silicic acid in (ZUCKMAYER), A., i, 288.
 human, variations in reaction of (HOLLÓ), A., i, 288.
 effect of ingestion of hydrochloric acid on the composition of (STENLE and McCARTY), A., i, 755.
 infants', pigments in (BRULÉ and GARBAN), A., i, 755.
- Urine**, analytical methods relating to:—
 use of potassium zinc ferrocyanide in analysis of (THIERY), A., ii, 527.
 detection of acetone in (CITRON), A., ii, 284.
 detection of albumin in (RENAUX), A., ii, 472.
 detection of albumoses and peptones in (FITTIPALDI), A., ii, 419.
 detection of Bence-Jones protein in (MILLER and SWEET), A., ii, 720.
 estimation of ammonia and amino-acids in (PHILIBERT), A., ii, 605.
 estimation of arsenic in (KENSELSON), A., ii, 59; (SCHEFFLER), A., ii, 245.
 estimation of calcium, magnesium, potassium, and sodium in (TISDALL and KRAMER), A., ii, 655.
 estimation of hippuric acid in (KINGSBURY and SWANSON), A., ii, 662.
 estimation of nitrogen in (MESTREZAT and JANET), A., i, 477; ii, 58.
 estimation of oxalic and oxaluric acids in (DAU), A., ii, 356.
 estimation of phenolic substances in (TISDALL), A., ii, 67.
 estimation of phosphates in (FISKE), A., i, 411.
 estimation of sugars in (SUMNER), A., ii, 526; (SUMNER and GRAHAM), A., ii, 564; (VAN DER HART and KOERS), A., ii, 601; (BENEDICT and OSTERBERG), A., ii, 660.
 estimation of sulphur in (RABAUT and STILLMUNKES), A., ii, 556.
 estimation of urea in (DOUBLET and LESCEUR), A., ii, 70; (STENLE; PHILIBERT), A., ii, 605; (STROHMANN and FLINTZER), A., ii, 664.
 removal of ammonia from, before estimation of urea (YOUNGBURG), A., ii, 358.
 estimation of veronal in (VAN ITALIE and STRENNHAUER), A., ii, 607.
- Urobilin** in urine of infants (BRULÉ and GARBAN), A., i, 755.
- Urochromogen** (WEISS), A., i, 136.
- Ursen**, distribution of, in plants, and its derivatives (NOOYEN), A., i, 117.

V.

- Vagus nerve**, modifications of, during digestion (LOEFLER, DEBRAY, and TOMNET), A., i, 635.
- Valency** (BENKATH), A., ii, 38.
theory of (GNEZDA), A., ii, 394;
(CUX), A., ii, 584.
electrochemical theories of (FRIEND), T., 1040.
determination of (WÖHLER and BALZ), A., ii, 633.
and co-ordination (BRIGGS), T., 1876.
and critical constants of organic compounds (HERZ), A., ii, 163.
partial, conjugation of (ROBINSON), A., ii, 545.
secondary (SMITH), A., ii, 315, 324.
subsidiary (CLARK, QUICK, and HARKINS), A., ii, 116; (EPHRAIM and MÜLLER), A., ii, 455.
- Valeraldehyde**, γ -amino-, and γ -chloro-, and their derivatives (HELPERICH and DOMMER), A., i, 51.
- Valerian**, alkaloids of (GORIS and VISCHMAC), A., i, 488.
- Valeric acid**, bornyl ester, preparation of (DUBOSC and LUTTRINGER), A., i, 115.
- Valeric acid**, γ -bromo-, action of, on amines (EMMERT and MEYER), A., i, 268.
- n-Valeric acid**, fate of, in the animal organism (BLUM and AUBEL), A., i, 756.
- α -chloroisobutyl ester (ULICH and ADAMS), A., i, 301.
- n-Valeric acid**, *dl*- α -amino-. See Norvaline.
- isoValeric acid**, α -glucose ester (HESSE, MESSMER, and KLEITZ), A., i, 306.
- isoValerylcarbamide** (*bromural*), preparation of (YOSHITOMI and WATANABE), A., i, 775.
- 6-isoValerylidenamino-1-methyl-3-ethylbenzene** (MAILHE), A., i, 662.
- Vanadic acid**. See under Vanadium.
- Vanadium**, arc spectra of (KIESS and MEGGERS), A., ii, 4.
- Vanadium pentoxide** and phosphoric acid as a reagent for wood and vanillin (GRÜSS), A., ii, 284.
- Vanadic acid**, equilibrium of, in solution in sulphuric acid (AUGER), A., ii, 554.
reaction of hydrogen peroxide with (AUGER), A., ii, 457.
- Vanadium detection, estimation, and separation**:—
detection of, and its separation from uranium and chromium (BROWN-ING), A., ii, 279.
- Vanadium detection, estimation, and separation**:—
estimation of (NAKAZONO), A., ii, 714.
estimation of, in ores (SCHAAL), A., ii, 459.
estimation of, in steel and iron alloys (ROLLA and NUTI), A., ii, 597.
- isoVanillic acid**, ethyl ester (SPÄTH), A., i, 51.
- Vanillin**, detection of (GRÜSS), A., ii, 284.
- Vaporisation**, energy changes in (AUCUBERT), A., ii, 240.
- Vapours**, ratio of the density of liquids and (SWIENTOSLAWSKI), A., ii, 535.
saturated, specific heat of (ARIES), A., ii, 17.
- Vapour pressure** (SCHAMES), A., ii, 165;
(SHAXBY), A., ii, 239; (HERZ), A., ii, 302, 432.
determination of (VAN LAAR; MEXZIES), A., ii, 17.
measurement of, at high temperature (RUFF and MUGDAN), A., ii, 485;
(RUFF and SCHMIDT), A., ii, 486.
and sublimation of metals (VAN LIEMPT), A., ii, 165.
of mixed liquids (PORTER), A., ii, 377.
of salt hydrates (WILSON), A., ii, 376;
(NOYES and WESTBROOK), A., ii, 377.
tables of, for measurement of temperature (STOCK, HENNING, and KIES), A., ii, 432.
- Vapour tension**. See Vapour pressure.
- Variability**, law of (ERLICH), A., ii, 561.
of systems (RAYBAU), A., ii, 31.
- Vegetables**, water-soluble vitamins in (WHIPPLE; MILLER), A., i, 85.
estimation of carbohydrates in (MYERS and CROLL), A., ii, 465.
- Velocity constants** and the quantum theory (TRAUTZ), A., ii, 180.
- Velocity of decomposition** of crystals (HINSHELWOOD and BOWEN), A., ii, 443.
- Velocity of ionisation** in non-aqueous solutions (WALDEN), A., ii, 170.
- Velocity of migration** of ions in crystals (V. HEVESY), A., ii, 172.
- Velocity of reaction** (PADOA), A., ii, 496.
calculation of (DUSHMAN), A., ii, 315.
in mixed solvents (CASHMORE, MCCORMIE, and SCARBOROUGH), T., 670.
involving gases, influence of colloids on (FINDLAY and THOMAS), T., 172.
- Velocity of reduction** of azo-compounds (GOLDSCHMIDT and BRAUNAS), A., ii, 184.
by platinum black (VAVON), A., ii, 542.

- Velocity of saponification** (FRYER), A., ii, 319.
 of esters (SKRABAL and SINGER), A., ii, 34.
- Veratronitrile**, 6-nitro- (KEFFLER), T., 1479.
- Verbenene**. See Dehydro- α -pinene.
- Veronal**, estimation of, in urine and human organs (VAN ITALLIE and STRENHAEUER), A., ii, 607.
- Vinyl ethers**, preparation of alkyl derivatives of (PLAUSONS FORSCHUNGSINSTITUT G. m. b. H.), A., i, 762.
 ethyl ether, $\alpha\beta$ -dichloro-, preparation of dichloro- and chlorobromo-acetates from (CROMPTON and TRIFFITT), T., 1874.
- 1-Vinylbenziminazole**, and its salts (MEISENHEIMER and WIEGER), A., i, 739.
- Vinylchloroarsines**, chloro- (GREEN and PRICE), T., 448.
- Violones** (DILTHEY and BURGER), A., i, 429.
- Violonimine picrate** (DILTHEY, BAURFELD, GEISELBRECHT, SEEGER, and WINKLER), A., i, 190.
- Viscosimeter** (FISCHER), A., ii, 382.
- Viscosity**, relation between conductivity and (WALDEN), A., ii, 160.
 and electrical conductivity of solutions in various aliphatic amines (ELSEY), A., ii, 79.
 of aqueous solutions (PULVERMACHER), A., ii, 171.
 effect of, on the conductivity of salt solutions (MACINNES), A., ii, 619.
 of solutions of amino-acids (HEDESTRAND), A., i, 546.
 of colloids (ALEXANDER), A., ii, 310.
 of colloidal suspensions (EGNER), A., ii, 382.
 of disperse systems (LÜERS and SCHNEIDER), A., ii, 86.
 of heterogeneous systems (HESS), A., ii, 18; (EINSTEIN), A., ii, 19.
 of liquids (KENDALL and MONROE), A., ii, 241.
 influence of temperature on (VAN AUREL), A., ii, 575.
 of proteins (LOEB), A., i, 822.
- Vitamins in milk** (HOPKINS), A., i, 477.
 antuberi-beri, detection of (FUNK and DUBIN), A., ii, 72.
 antineuritic, and antiscorbutic, differential dialysis of (ZILVA and MIURA), A., i, 702.
 antiscorbutic, effect of heat and oxidation on (DUTCHER, HARSHAW, and HALL), A., i, 839.
- Vitamins**, fat-soluble (COWARD and DRUMMOND), A., i, 87.
 distinction between yellow pigments and (STEPHENSON), A., i, 295.
 water-soluble, preparation and estimation of (FRANKEL and SCHWARZ), A., ii, 228.
 synthesis of, by yeast (NELSON, FULMER, and CESSNA), A., i, 386.
 effect of, on metabolism and nutrition (KARR), A., i, 75.
 in vegetables (WHIPPLE; MILLER), A., i, 85.
 estimation of (SWOBODA), A., i, 76; (EDDY, HERT, STEVENSON, and JOHNSON), A., i, 758.
- Vitamin-A**, formation of, in plant tissues (COWARD and DRUMMOND), A., i, 837.
 effects of heat and aeration on (HOPKINS, DRUMMOND, and COWARD), A., i, 475.
 in carrots (STEPHENSON), A., i, 484.
 in fats (ARON and GRALKA), A., i, 475.
 action of ozone on, in fats (ZILVA), A., i, 475.
- Vitamin-E**, synthesis of, by yeast (HARDEN and ZILVA), A., i, 702.
- Vitamin-A, -B, and -C**, extraction of (McCLUNDOS), A., i, 839.
- Vitex trifolia**, constituents of the oil of (SHINOSAKI), A., i, 351.
- Volume**, changes of, in solution (BURNOWS), A., ii, 308.
 atomic, of isotopes (SODDY), A., ii, 698.
 atomic and molecular, relation between, at absolute zero (LORENZ and HERZ), A., ii, 536.
 molecular, analysis of (PEASE), A., ii, 437.
 ratio of density to (HERZ), A., ii, 436.
 of alkali haloids (FAJANS and GRIMM), A., ii, 168.
 of the halogens and their compounds (BILTZ), A., ii, 437.
 of organic liquids (WÖHLISCH), A., ii, 536.
 of solid oxides (BALAREFF), A., ii, 575.
 relative, of the elements (COLLINS), A., ii, 168.
- Volumes**, atomic, linear relation between (BILTZ), A., ii, 487.
- W.**
- Water**, asymmetry of molecules of (CUT), A., ii, 584.

Water, colour and molecular formula of

(TOMKINSON), A., ii, 396.
vapour, molecular state of (KENDALL),
A., ii, 106; (MENZIES), A., ii, 381.
photolysis of (BAUR and REEMANN),
A., ii, 288.

electrolysis of (BAUR), A., ii, 374.

electrolysis of, containing dissolved air
(TIRDE and SCHLEED), A., ii, 328.

heat of vaporisation of (v. STEIN-
WEHR; HENNING), A., ii, 167.

effect of finely-divided solids on the
freezing point of (PARKER), A., ii,
430.

action of dissolved potassium chloride
on the vapour pressure of (LOVE-
LACE, FRAZER, and SEASE), A., ii,
239.

surface tension of (RICHARDS and
CARVER), A., ii, 384.

effect of adsorbed gases on the surface
tension of (BHATNAGAR), A., ii,
169.

formation of films on the surface of
(LABROUSTE), A., ii, 18.

adsorption of, by powdered substances
(SCHERINGA), A., ii, 491.

corrosive action of, when treated with
chlorine (CLARK and ISELEY), A.,
ii, 84.

activation of, by copper and its oxides
(WERNICKE and SORDELLI), A., i,
758.

Water of crystallisation, structure of
salts containing (RHODES), A., ii, 255.

NATURAL WATER:—

Potable or drinking water, estimation
of hydrogen-ion concentration of
(KOLTHOFF), A., ii, 409.

Salt water, estimation of bromine in
(LEBEAN and PICON), A., ii, 591.

Sea-water, corrosion of brass by
(BELLADEN), A., ii, 588.

of the Gulf of Mexico, carbon di-
oxide in (WELLS), A., ii, 269.

Spring and mineral waters, nitrated,
from Portugal (LEMERRE), A., ii,
704.

from iron springs, radioactive
substances in deposits from
(HENRICH), A., ii, 617.

Water analysis:—

analysis of (WINKLER), A., ii, 413.

turbidity standard in (WELLS), A., ii,
56.

detection of indican in (JOLLES), A.,
ii, 69.

estimation of, in alcohols (WIRTH),
A., ii, 651.

estimation of, in mixtures of nitric
and sulphuric acids (BERR and v.
BOLTENSTERN), A., ii, 705.

Water analysis:—

estimation of the active carbonic acid

in (MASSINK; KOLTHOFF), A., ii, 59.

estimation of the hydrogen-ion con-
centration of (BEANS and OAKES),

A., ii, 12; (KOLTHOFF), A., ii, 565.

estimation of hydrogen sulphide in
(CHRÉTIEN and VANDENBERGHE),
A., ii, 214.

estimation of mineral sulphides in
(FAIRCHILD), A., ii, 126.

estimation of oxygen dissolved in
(VANOSNI), A., ii, 517.

estimation of phosphates in (FLOREN-
TIN), A., ii, 707.

estimation of sulphuric acid in
(WINKLER), A., ii, 126.

Water gas (VIGNON), A., i, 217.

Wax, bees', dry distillation of (FUNKER),
A., i, 533.

mixtures of colophony and (JAHN),
A., i, 427.

montan, of the Central German coal,

constituents of (PSCHORR and

PRAFF), A., i, 4.

paraffin. See Paraffin wax.

determination of the saponification,

iodine and bromine numbers of
(SCHULEK), A., ii, 603.

Weights, standardisation of (HOPKINS,
ZINN, and ROGERS), A., ii, 104.

varnished, accuracy obtainable with
(VOGELENZANG), A., ii, 39.

Weights, molecular, determination of
(YAMAGUCHI), A., i, 83;

(STIEPKES), A., ii, 324;

(MATHIGNON), A., ii, 573;

(RAST), A., ii, 623.

from hydrolysis (COLIN and

CHAUDUN), A., ii, 255.

Wheat, relation of the hydrogen-ion
concentration of nutrient solutions to
the growth of (MC CALL and HASE),
A., i, 911.

Whitefish, constituents of the sperm of
(LYNCH), A., i, 75.

Wines, detection of tartaric acid in
(MATHIEU), A., ii, 662.

detection and estimation of salicylic
acid in (FRESENIUS and GRUNHUT),
A., ii, 602.

estimation of ethyl alcohol in (TRATO-
LONGO), A., ii, 598.

estimation of glycerol in (HRIDUSCHKA
and ENGLERT), A., ii, 524.

estimation of iron in (MALVEZIN and
RIVILLAND), A., ii, 351; (MATHIEU),
A., ii, 411.

estimation of sugars in (FRESENIUS
and GRUNHUT), A., ii, 221.

estimation of tannins in (CLARENS),
A., ii, 719.

- (*o*-Xylene, *Me*:*Me* = 1:2; *m*-xylene, *Me*:*Me* = 1:3; *p*-xylene, *Me*:*Me* = 1:4.)
Women, basal metabolism of (BLUNT and DYER), A., i, 699.
Wood, colloidal chemistry of (WISLICENUS), A., i, 84.
 decay of (SCHMITZ), A., i, 703.
 hard, analysis of (DORE), A., i, 87.
 detection of (GRÜSS), A., ii, 284.
Wool, action of colouring matters on (HALLER), A., ii, 576.
Work, virtual, theorem of, deduction of the law of chemical statics from (ARIANO), A., ii, 580.
Worms, muscle of. See Muscle.
Wormseeds, estimation of santonin in (KARIYONE and KIMURA), A., ii, 223.
Wormseed oil, American, reaction of (LANGER), A., i, 259.

X.

- Xanthic acid**, salts, reactions of (WHITBY and BEARDWOOD), A., ii, 562.
Xanthine bases, estimation of, in urine (PHÉRY), A., ii, 527.
Xanthone-2-carboxylic acid, 3-bromo-, and its methyl ester (ECKERT and SEIDEL), A., i, 863.
Xylene, effect of light on the bromination of (SWENSSON), A., ii, 291.
m-Xylene, solubility of nitroanilines in (CHAIKAS), A., i, 235.
m-Xylene, 4:6-diamino-, acetyl and *p*-toluenesulphonyl derivatives (PEARMAN), T., 718.
m-Xylene-4-azo- β -naphthol 6-amino-, acetyl derivative (PEARMAN), T., 718.
m-Xylene-4-azoresorcinol, 6-nitro-, and its diacetyl derivative (PEARMAN), T., 717.
m-Xylene-4-azosalicylic acid, 6-nitro- (PEARMAN), T., 718.
m-4-Xyleneisodiazoxide, 5-nitro-, potassium derivative (BAMBERGER and V. GOLDBERGER), A., i, 135.
Xylenesulphonmethylamide, manufacture of (BRITISH CELLULOSE and CHEMICAL MFG. CO., LTD., BADER and NIGHTINGALE), A., i, 786.
m-Xylenol, and its hydrochloride (MEYER and ELBERS), A., i, 240.
s-*m*-Xylenol, *o*-amino-, oxidation of (V. AUWERS, BORSCHÉ, and WELER), A., i, 571.
o-bromo- (V. AUWERS, BORSCHÉ, and WELER), A., i, 572.
p-bromo-*o*-amino-, and *p*-bromo-*o*-nitro- (V. AUWERS, BORSCHÉ, and WELER), A., i, 572.
Xylenols, dibromo-, and dichloro- (DATTA and BHOUMIK), A., i, 331.
 1:2:3-Xylenolphthalein, use of, as an indicator (CSANYI), A., ii, 270.
Xylidines, catalytic preparation of methyl derivatives of (MAILHE and DE GODON), A., i, 108.
m-2:4-Xyloquinone-2'-bromo-5'-hydroxy-*m*-4'-xylylimide (V. AUWERS, BORSCHÉ, and WELER), A., i, 572.
m-2:5-Xyloquinone-5'-hydroxy-*m*-4'-xylylimide, 4-amino-, and its salts and derivatives (V. AUWERS, BORSCHÉ, and WELER), A., i, 571.
Xylose, utilisation of, by animals (ROCKWOOD and KHOROZIAN), A., i, 526.
o-*m*-Xylol methyl sulphide (V. AUWERS and THIES), A., i, 121.
m- and *p*-Xylilazides, action of, with hydrobromic, hydrochloric, and sulphuric acids, and with ethyl and methyl alcohols and sulphuric acid (BAMBERGER), A., i, 719.
 9:8-*m*- and *p*-Xylylenedifluorenes (SIEGLITZ and JASSOY), A., i, 791.
p-Xylilhydroxylamine, action of, with ethyl and methyl alcohols and sulphuric acid (BAMBERGER), A., i, 719.
m-4-Xylilnitroamine, 5-nitro- (BAMBERGER and V. GOLDBERGER), A., i, 135.
s-*m*-Xylyloxalyl chloride, and *p*-chloro- (STOLLÉ and KNEBEL), A., i, 578.
p-Xylyloxalyl chloride (STOLLÉ and KNEBEL), A., i, 578.
s-*m*-Xylyloxalylanilide, and *p*-chloro- (STOLLÉ and KNEBEL), A., i, 578.
m-4-Xylol *n*-propyl ketone, and amino-, chloro-, and nitro-, and their derivatives (MORGAN and HICKINBOTTOM), T., 1859.

Y.

- Yeast**, cultivation of, in purified nutrients (MACDONALD and MCCOLLUM), A., i, 480.
 factors influencing the growth of (SLATOR), T., 115.
 toxicity of ammonium fluoride towards (FULMER), A., i, 910.
 cellulose from (SALKOWSKI), A., i, 499.
 action of colouring matters on (FRASER), A., i, 293.
 fat of (HINSBERG and ROOS), A., i, 148.
 fermentation by (KÖHLER), A., i, 81.
 fermentation of dextrose and levulose by (HARDEN and HENLEY), A., i, 480, 642.
 fermentation of dipeptides by (ABDERHALDEN and FODOR), A., i, 481.
 fermentation of galactose by (V. EULER and LAURIN), A., i, 642.

- Yeast**, influence of cadmium and zinc salts on fermentation by (KOSTYCHEV and FREY; KOSTYCHEV and SUBKOVA), A., i, 149.
 effect of hydrogen-ion concentration on fermentation by (v. EULER and HEINTZE), A., i, 149.
 adaptation of, to a galactose fermentation medium (v. EULER, LAURIN, and PETTERSSON), A., i, 386.
 nutrition of (FULMER, NELSON, and SHERWOOD), A., i, 292; (NELSON, FULMER, and CESSNA), A., i, 386.
 effect of alcohol on the toxicity of phenol towards (FULMER), A., i, 293.
 proteins of (FODOR), A., i, 81, 701; (THOMAS), A., i, 292.
 synthesis of vitamin-B by (HARDEN and ZILVA), A., i, 702.
 estimation of maltase in (WILSTÄTTER and STREIBELT), A., ii, 72.
Yeast cells, influence of copper sulphate on autolysis of (SVANBERG and v. EULER), A., i, 81.
 physiology of (KÖHLER), A., i, 81.
Yeast-nucleic acid (STREDEL and PEISER), A., i, 66; (THANNHAUSER and SACHS), A., i, 201.
Yellow wood, extract of. See Morin.
Yerba mate, estimation of caffeine in (UGARTE), A., ii, 470.
Yohimba bark, estimation of yohimbine in (SCHOMER), A., ii, 360.
Yohimbine, estimation of, in yohimba bark (SCHOMER), A., ii, 360.
Yperite, detection and estimation of (GIGNARD, RIVAT, and SCATCHARD), A., ii, 282.
- Z.**
- Zanthoxylum macrophyllum**, constituents of the bark of (GOODSON), A., i, 483.
Zein, value of, in nutrition (SURE), A., i, 526.
Zeolites, constitution of (TSCHERMAK), A., ii, 703.
Zetruinic acid. See γ -Truxinic acid.
Zinc, atomic weight of (BAXTER and HODGES), A., ii, 639.
 arc and spark spectra of (SEELIGER and THAER), A., ii, 566.
 ultra-violet spark spectrum of (L. and E. BLOCQ), A., ii, 3, 286; (MILLIKAN), A., ii, 3; (SAWYER), A., ii, 363.
 chemical constant of (HEIDHAUSEN), A., ii, 240.
 recrystallisation of (MARING), A., ii, 639.
- Zinc**, metallurgy of (LEMARCHANDS), A., ii, 550.
 interpenetration of copper and (WEISS and LAFITTE), A., ii, 551.
 reduction with, in volumetric analysis (TREADWELL), A., ii, 523.
 reduction of acid solutions of ferric sulphate by (SUGDEN), T., 233.
 precipitation of, with chromium (YASUI), A., ii, 216.
 content of, in vertebrate animals (BERTRAND and VLADESCO), A., i, 382.
Zinc alloys with aluminium and copper (HAUGHTON and BINGHAM), A., ii, 335.
 with cerium (CLOTOPSKI), A., ii, 203.
 with copper, specific heat of (DORRINCHEL and WERNER), A., ii, 428.
 with lead, electrical resistance of (KONNO), A., ii, 425.
 with thallium, electromotive properties of (KREMANN and LOBINGER), A., ii, 157.
- Zinc bases (zincamines):—**
Zincetetrammine polyiodide (EPHRAIM and MOSIMANN), A., ii, 339.
Zinc salts, influence of, on alcoholic fermentation (KOSTYCHEV and SUBKOVA), A., i, 149.
 occurrence of, in marine animals (BODANSKY), A., i, 78.
 content and distribution of, in the animal organism (BERTRAND and VLADESCO; BODANSKY), A., i, 907.
 influence of, on reproduction in vertebrate animals (BERTRAND and VLADESCO), A., i, 699.
- Zinc oxide**, luminescence of (WINTER), A., ii, 670.
 sulphide, action of, light on (NISHIZAWA), A., ii, 263.
 phosphorescence and fusion of (TIEDE and SCHLEPPE), A., ii, 263; (TOMASCHER), A., ii, 588.
- Zinc detection and estimation:—**
 detection of, in plant and animal organs (KEILHOLZ), A., ii, 708.
 estimation of (WINKLER), A., ii, 521.
 estimation of, electrolytically (BAXTER and HODGES), A., ii, 639.
 estimation of, volumetrically (KOTHOFF and VAN DIJK), A., ii, 418; (JANDER and STEHLMANN), A., ii, 711.
 estimation of, in foods (BODANSKY), A., ii, 656.

- Zinc copper couple**, Scales's, use of, in reducing nitric nitrogen (HARRISON), A., ii, 345.
- Zinc dust**, analysis of (BULLHEIMER), A., ii, 655.
- Zinc electrode**. See *Electrode*.
- Zirconia**. See *Zirconium dioxide*.
- Zirconium hydride**, gaseous, existence of (SCHWARZ and KONRAD), A., ii, 645.
- dioxide**, preparation and estimation of (ROSSITER and SANDERS), A., ii, 341.
- use of, as catalyst in esterification (MAILHE and DE GUDON), A., i, 219.
- orychloride**, ionisation of (ADOLF and PAULI), A., ii, 700.
- Zirconium silicate**, equilibrium of, with lithium silicate (SCHWARZ and HAACKE), A., ii, 452.
- Zirconyl chloride and sulphate**, hydrolysis of (VENABLE and JACKSON), A., ii, 118.
- Zirconium estimation and separation** :—
- estimation of, and its separation from uranium (ANGELETTI), A., ii, 524.
- separation of, from columbium and from tantalum (SCHORLLER and POWELL), T., 1927.
- separation of, from silicon, tin, and titanium (WENGER and MOREL), A., ii, 464.
- Zymocasein** (THOMAS), A., i, 292.

INDEX TO PATENTS.

Austrian Patent.

82866, A., i, 650

British Patents.

140051, A., i, 511
 140784, A., i, 706
 143260, A., i, 299
 143891, A., i, 395
 144604, A., i, 425
 145071, A., i, 418
 145614, A., i, 413
 145621, A., i, 267
 145743, A., i, 854
 146114, A., i, 297
 146411, A., i, 845
 146869, A., i, 52
 147000, A., i, 354
 147067, A., i, 852
 148743, A., i, 244
 149848, A., ii, 196
 149662, A., ii, 196
 153827, A., i, 26
 155575, A., i, 413
 155576, A., i, 413
 155748, A., i, 128
 156892, A., ii, 266
 157226, A., i, 510
 157850, A., i, 729
 161591, A., i, 493
 161679, A., i, 420
 161859, A., i, 504
 161922, A., i, 825
 162578, A., i, 505
 165452, A., i, 712
 165838, A., i, 742
 166934, A., i, 712

167066, A., i, 737

167941, A., i, 786

168889, A., i, 805

169025, A., i, 858

169667, A., i, 871

169732, A., i, 870

170056, A., i, 854

German Patents (D.R.-P.).

298541, A., i, 333

298553, A., i, 333

301275, A., i, 333

313320, A., i, 752

321203, A., i, 14

325713, A., i, 28

325714, A., i, 177

327049, A., i, 176

327051, A., i, 168

327510, A., i, 155

328342, A., i, 115

329246, A., i, 274

329247, A., i, 274

330572, A., i, 861

330642, A., i, 217

330801, A., i, 316

330813, A., i, 355

330814, A., i, 354

330945, A., i, 360

331145, A., i, 267

332013, A., i, 350

332204, A., i, 339

332474, A., i, 341

332678, A., i, 341

332679, A., i, 319

332681, A., i, 320

332853, A., i, 424

332955, A., i, 454

333157, A., i, 406

333158, A., i, 409

334250, A., i, 498

334367, A., i, 543

334553, A., i, 540

334554, A., i, 535

334555, A., i, 591

335113, A., i, 515

335197, A., i, 517

335476, A., i, 558

335602, A., i, 567

335763, A., i, 596

335993, A., i, 618

335994, A., i, 619

336153, A., i, 587

336615, A., i, 659

337734, A., i, 747

338147, A., i, 803

338281, A., i, 762

338427, A., i, 774

338428, A., i, 774

Japanese Patent.

35701, A., i, 3

Swiss Patents.

86381, A., i, 156

87882, A., i, 715

87883, A., i, 715

United States Patents.

1360994, A., i, 416

1369383, A., i, 652

1372382, A., i, 796

1373038, A., ii, 645

1377081, A., ii, 699

ERRATA.

VOL. 112 (ABSTR., 1917).

Page Line
 ii. 167 14 for "hydrogen" read "hydrogen sulphide."

VOL. 118 (ABSTR., 1920).

ii. 908 5* for " $3\text{H}_2\text{PO}_4$ " read " $3\text{H}_4\text{PO}_4$ "
 ii. 737 5 } ,, "Ethyl Benzoate" read "Benzyl Benzoate."
 6 }
 8 }
 14 } ,, "ethyl benzoate" read "benzyl benzoate."
 19 }
 ii. 753 20 after "GARNER" insert "FREDERICK CHALLENGER."

VOL. 120 (ABSTR., 1921).

i. 62 10 for "Triquinonylmethanes" read "Triquinolylmethanes."
 11 ,, "Tri-2-quinonylmethane" read "Tri-2-quinolylmethane."
 14 }
 i. 63 5 } ,, "triquinonylmethane" read "triquinolylmethane."
 7 }
 8 } "Triquinonylcarbinol" read "Triquinolylcarbinol."
 i. 165 25 }
 i. 258 14 } ,, "ZEIGLER" read "ZIEGLER."
 i. 266 2 } ,, "nitrate" read "nitrite."
 i. 330 19* } ,, "793,794" read "i, 793,794."
 i. 334 9 }
 10 } ,, "GORDON" read "CORDON."
 i. 388 2 }
 i. 503 2 } ,, "Arch. Anat. Physiol." read "Virchow's Archiv."
 i. 511 26 }
 i. 516 24 } ,, "Soil. Sci., 172," read "Soil. Sci., 11."
 i. 566 20* }
 i. 702 26 } ,, "HALFTEN" read "HAEFTEN."
 i. 761 8 }
 i. 796 16* } ,, "fluorenoxalate" read "fluoreneglyoxylate."
 i. 914 8 }
 ii. 6 13 } ,, "Osindole" read "Oxindole."
 ii. 176 10* }
 ii. 191 9 }
 ii. 224 12* }
 ii. 285 14* }
 ii. 285 9* }
 ii. 344 13* }
 ii. 573 3 }
 ,, 4 }
 ii. 621 21* }
 ii. 811, col. ii, entries under "Ruggli" should be under "Ruggli" on ii, 812.

* From bottom.

JOURNAL OF THE CHEMICAL SOCIETY.

ABSTRACTS OF PAPERS ON ORGANIC, PHYSIOLOGICAL, AND AGRICULTURAL CHEMISTRY.

Committee of Publication:

A. J. ALLMAND, M.C., D.Sc.	T. M. LOWRY, C.B.E., D.Sc., F.R.S.
O. L. BRADY, D.Sc.	J. I. O. MANSON, M.B.E., D.Sc.
A. W. CROSSLEY, C.M.G., C.B.E., D.Sc., F.R.S.	G. T. MORGAN, O.B.E., D.Sc., F.R.S.
C. H. DESCH, D.Sc., Ph.D.	T. S. PATTERSON, D.Sc., Ph.D.
M. O. FORSTER, D.Sc., Ph.D., F.R.S.	J. C. PHILIP, O.B.E., D.Sc., Ph.D., F.R.S.
J. T. HEWITT, M.A., D.Sc., Ph.D., F.R.S.	N. V. SIDGWICK, M.A., Sc.D.
J. C. IRVINE, C.B.E., D.Sc., F.R.S.	J. F. THORPE, C.B.E., D.Sc., F.R.S.
C. A. KEANE, D.Sc., Ph.D.	Sir JAMES WALKER, D.Sc., LL.D., F.R.S.

Editors:

J. C. CAIN, D.Sc.

A. J. GREENAWAY.

Assistant Editor:

CLARENCE SMITH, D.Sc.

Assistant:

A. A. ELDRIDGE, B.Sc.

Indexer:

MARGARET LE PLA, B.Sc.

Abstractors:

G. BARGER, M.A., D.Sc., F.R.S.	T. H. POPE, B.Sc.
J. C. DRUMMOND, D.Sc.	G. W. ROBINSON, M.A.
H. J. EVANS, B.Sc.	F. H. RODD, D.Sc.
W. GODDEN, B.Sc.	F. M. ROWE, D.Sc.
C. R. HARRINGTON, B.A.	W. P. SKERTCHLY.
C. K. INGOLD, D.Sc.	F. SODDY, M.A., F.R.S.
K. KASHIMA.	J. F. SPENCER, D.Sc., Ph.D.
J. KENNER, D.Sc., Ph.D.	L. J. SPENCER, M.A., Sc.D.
W. O. KERMACK, M.A., B.Sc.	E. STEDMAN, B.Sc.
H. KING, D.Sc.	D. F. TWISS, D.Sc.
S. I. LEVY, B.A., B.Sc.	J. C. WITHERS, Ph.D.
G. F. MORRELL, D.Sc., Ph.D.	H. WREN, M.A., D.Sc., Ph.D.
J. R. PARTINGTON, M.B.E., D.Sc.	S. S. ZILVA, D.Sc., Ph.D.

1921. Vol. CXX. Part I.

LONDON:

GURNEY & JACKSON, 33, PATERNOSTER ROW, E.C. 4.

1921.

Abstractors of the *Journal of the Society of Chemical Industry*,
who have contributed to this volume.

S. S. AUSTIN.
L. A. COLES.
A. J. HALL.
C. IRWIN.
J. H. JOHNSTON, M.Sc.
J. H. LANE.
C. A. MITCHELL, M.A.
W. PAYMAN.

A. G. POLLARD.
A. R. POWELL.
H. C. REYNARD.
A. B. SEARLE.
J. S. G. THOMAS, B.Sc.
D. WOODROFFE
W. J. WRIGHT.

INSTRUCTIONS TO ABSTRACTORS,

GIVING THE

NOMENCLATURE AND SYSTEM OF NOTATION

ADOPTED IN THE ABSTRACTS.

THE object of the abstracts of chemical papers published elsewhere than in the Transactions of the Society is to furnish the Fellows with a concise account of the progress of chemical science from month to month. It must be understood that as the abstracts are prepared for the information of the Fellows in general, they cannot possibly be made so full or so detailed as to obviate on the part of those who are engaged on special investigations the necessity of consulting the original memoirs.

1. Titles of papers must be given literally.
2. Before beginning to write the abstract, the whole of the original paper must be read, in order that a judgment may be formed of its importance and of the scale on which the abstract should be made.
3. In the case of papers dealing with subjects not strictly chemical, the abstract should refer only to matters of chemical interest in the original.
4. The abstract should consist mainly of the expression, in the abstractor's own words, of the substance of the paper.
5. The abstract should be made as short as is consistent with a clear and accurate statement of the author's results.
6. A concise statement showing the general trend of the investigation should be given at the commencement of those abstracts where the nature of the original permits of it.
7. If an abstract of a paper on the same subject, either by the author of the paper abstracted, or by some other author, has already appeared, note should, as a rule, be made of this fact.
8. Matter which has appeared once in the *Abstracts* is not to be abstracted again, a reference being given to the volume in which the abstract may be found.
9. As a rule, details of methods of preparation or analysis, or generally speaking of work, are to be omitted, unless such details are essential to the understanding of the results, or have some independent value. Further, comparatively unimportant compounds, such as the inorganic salts of organic bases or acids, should be mentioned quite shortly. On the other hand, data such as melting and boiling points, sp. gr., specific rotation, &c., must be given in every case unless recorded in earlier papers.

Nomenclature.

10. Employ names such as *sodium chloride*, *potassium sulphate* for inorganic compounds, and use the terminals *ous* and *ic* only in distinguishing compounds of different orders derived from the same elementary radicle; such, for instance, as mercurous and mercuric chlorides, sulphurous and sulphuric acids.

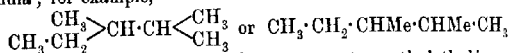
11. Term compounds of metallic radicles with the OH-group *hydroxides* and not hydrates, the name hydrate being reserved for compounds supposed to contain water of combination or crystallisation.

12. Term salts containing an amount of metal equivalent to the displaceable hydrogen of the acid, *normal* and not neutral salts, and assign names such as sodium hydrogen sulphate, disodium hydrogen phosphate, &c., to the acid salts. Basic salts as a rule are best designated merely by their *formulae*.

13. Names in common use for oxides should be employed, for example: NO, nitric oxide; CO₂, carbon dioxide; P₄O₁₀, phosphoric oxide; As₂O₃, arsenious oxide; Fe₂O₃, ferric oxide.

14. In open chain compounds, Greek letters must be used to indicate the position of a substituent, the letter *a* being assigned to the first carbon atom in the formula, except in the case of CN and CO₂H, for example, CH₃·CH₂·CH₂·CH₂I *a*-iodobutane, CH₃·CH₂·CH₂·CN *a*-cyanopropane.

15. Isomeric open chain compounds are most conveniently represented as substitution derivatives of the longest carbon chain in the formula; for example,



should be termed *βγ*-dimethylpentane not methylethylisopropyl-

methane, and $\text{CH}_3\begin{matrix} \text{CH}_3 \\ > \text{CH} \cdot \text{CH} < \\ \text{CH}_3 \end{matrix} \text{ or } \text{CH}_3\cdot\text{CHMe}\cdot\text{CHMe}\cdot\text{CO}_2\text{H}$ should be termed *αβ*-dimethylbutyric acid, not *αββ*-trimethylpropionic, or *α*-methylisovaleric, or methylisopropylacetic acid.

16. Use names such as methane, ethane, &c., for the normal paraffins or hydrocarbons of the C_nH_{2n+2} series of the form CH₃·[CH₂]_n·CH₃, &c. Term the hydrocarbons C₂H₄ and C₂H₂ ethylene and acetylene respectively (not ethene and ethine). Homologues of the ethylene series are to be indicated by the suffix *-ene*, and those of the acetylene series, wherever possible, by *-ine*. Adopt the name *allene* for the hydrocarbon CH₂:C:CH₂.

17. Distinguish all hydroxyl derivatives of hydrocarbons by names ending in *ol*. Alcohols should be spoken of as mono-, di-, tri-, or *n*-hydric, according to the number of OH-groups. Compounds which are not alcohols, but for which names ending in *ol* have been used, are to be represented by names ending in *ole*, if a systematic name cannot be given, thus anisole not anisol, indole not indol. Compounds such as MeONa, EtONa, &c., should be termed sodium methoxide, sodium ethoxide, &c.

18. The radicles indicated in the name of a compound are to be

given in the order fluoro-, chloro-, bromo-, iodo-, nitro-, nitroso-, amino-, imino-, cyano-, thiocyno-, hydroxy-, keto-.

19. Compounds analogous to the acids of the lactic series containing the OH-group should be termed *hydroxy-*derivatives, and not *oxy-*derivatives; for example, hydroxyacetic and not oxyacetic acid. Compounds containing the analogous groups OEt, OPh, OAc, &c., should in like manner be termed *ethoxy-*, *phenoxy-*, *acetoxy-* derivatives. Thus α -ethoxypropionic acid, $\text{OEt}\cdot\text{CHMe}\cdot\text{CO}_2\text{H}$, instead of ethyl-lactic acid; 3:4-diethoxybenzoic acid, $(\text{OEt})_2\text{C}_6\text{H}_3\cdot\text{CO}_2\text{H}$, instead of diethylprotocatechuic acid; and α -acetoxypropionic acid, $\text{OAc}\cdot\text{CHMe}\cdot\text{CO}_2\text{H}$, instead of acetyl-lactic acid. Terms such as diethylprotocatechuic acid should be understood to mean a compound formed by the displacement of hydrogen atoms in the hydrocarbon radicle of protocatechuic acid by ethyl, thus, $\text{C}_6\text{H}_4\text{Et}_2(\text{OH})_2\cdot\text{CO}_2\text{H}$, and not $\text{C}_6\text{H}_4(\text{OEt})_2\cdot\text{CO}_2\text{H}$, just as dibromoprotocatechuic acid is understood to be the name of a compound of the formula $\text{C}_6\text{H}_2\text{Br}_2(\text{OH})_2\cdot\text{CO}_2\text{H}$.

20. The term *ether* should be restricted to the oxides of hydrocarbon radicles and their derivatives, and the esters (so-called compound ethers or ethereal salts) should be represented by names similar to those given to metallic salts.

21. When a substituent is one of the groups NH_2 , NHR , NR_2 , NH or NR , its name should end in *ino*; for example, β -aminopropionic acid, $\text{NH}_2\cdot\text{CH}_2\cdot\text{CH}_2\cdot\text{CO}_2\text{H}$, β -anilino-acrylic acid, $\text{NHPh}\cdot\text{CH}\cdot\text{CH}\cdot\text{CO}_2\text{H}$, α -iminopropionic acid, $\text{NH}\cdot\text{CMe}\cdot\text{CO}_2\text{H}$.

22. Compounds of the radicle SO_3H should, whenever possible, be termed sulphonic acids, or failing this, sulpo-compounds; for example, benzenesulphonic acid, sulphobenzoic acid.

23. Basic substances should invariably be indicated by names ending in *ine*, as aniline instead of anilin, the termination *in* being restricted to certain neutral compounds, viz., glycerides, glucosides, bitter principles, and proteins, such as palmitin, amygdalin, albumin. The compounds of basic substances with hydrogen chloride, bromide or iodide should always receive names ending in *ide* and not *ate*, as morphine hydrochloride and not morphine hydrochlorate.

24. The Collective Index, 4th decade (1903-1912) should be adopted as the standard of reference on questions of nomenclature not provided for in the preceding sections.

Notation.

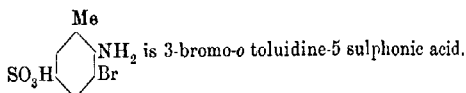
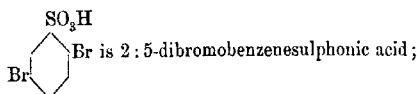
25. In empirical formulae the elements are to be given in the order C, H, O, N, Cl, Br, I, F, S, P, and the remainder alphabetically.

26. Equations should be omitted unless essential to the understanding of the results; as a rule, they should not be written on a separate line, but should "run on" with the text.

27. To economise space, it is desirable:

- (a) That *dots* should be used instead of *dashes* in connecting contiguous symbols or radicles, whenever this does not interfere with the clearness of the formula.

- (b) That formulae should be shortened by the judicious employment of the symbols Me for CH_3 , Et for C_2H_5 , Pr^a for $\text{CH}_2\text{CH}_2\text{CH}_3$, Pr^s for $\text{CH}(\text{CH}_3)_2$, Ph for C_6H_5 , Py for $\text{C}_5\text{H}_4\text{N}$, Ac for $\text{CO}\cdot\text{CH}_3$, and Bz for $\text{CO}\cdot\text{C}_6\text{H}_5$.
- (c) That formulae should be written *in one line* whenever this can be done without obscuring their meaning.
28. In representing the constitution of benzene derivatives, the relative positions of the radicles in the symbol of benzene should be indicated by numerals, instead of by means of the hexagon formula.
- (a) The abbreviations *o*-, *m*-, and *p*-, should be used in place of 1:2- or ortho-, 1:3- or meta-, and 1:4- or para.
- (b) In numbering positions in the case of substitution derivatives of phenol, aniline, benzonitrile, benzoic acid, benzenesulphonic acid, benzaldehyde, and toluene, the characteristic radicle of each of these parent substances is to be regarded as in position 1 (compare Collective Index).
- (c) Names of substitution derivatives should be given in such a way that the position of the substituent is indicated by a numeral prefixed; for example:—



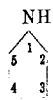
29. In representing the constitution of derivatives of other "closed chain" hydrocarbons, graphic formulae should not be employed, but the system of numbering positions indicated in Richter's *Lexikon der Kohlenstoff-Verbindungen* (3rd edition, 1910, pp. 14—26) should be used, of which the following schemes may be regarded as typical:—



Furan.



Thiophen.



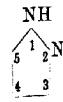
Pyrrole.



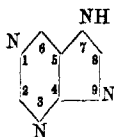
Oxazole.



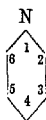
Thiazole.



Pyrazole



Purine.*



Pyridine.



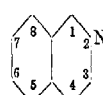
Indole.



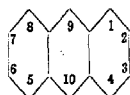
Naphthalene.



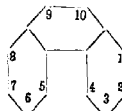
Quinoline.



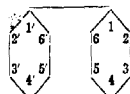
isoQuinoline.



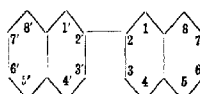
Anthracene.



Phenanthrene.



Diphenyl.

 β -Dinaphthyl.**Manuscript.**

30. In view of the difficulty of dealing with MSS. of widely varying sizes, abstracts cannot be accepted unless written on quarto paper (10 x 8 in.).

31. Not more than one abstract must appear on a sheet.

32. When an abstract exceeds a sheet in length, the sheets must be fastened together by means of gum at the top left-hand corner.

33. The name of the abstractor must be written diagonally at the top left-hand corner of the first sheet of the abstract.

Proofs.

34. Abstractors are expected to read and correct proofs carefully, and to check all formulae and figures against MSS.

35. All proofs, however small, must be returned to the Sub-Editor not later than 24 hours after receipt from the printers.

* * The Editor's decision, in all matters connected with the Abstracts, must be considered final.

* This numbering, proposed originally by E. Fischer, is adopted in the text of the *Lexikon*.

*List of Symbols Recommended by the Working Committee of the
International Commission for the Unification of Physico-chemical
Symbols (1914). [See Trans., 1921, 119, 502—512.]*

1. *Mathematical Symbols.*

	Usual symbol.	Alternative symbol.
Base of natural (Napierian) logarithms ...	e	
Diameter	d	
Radius	r	
Ratio of circumference to diameter	π	
Summation.....	Σ	
Variation	δ	
Total differential	d	
Partial differential	∂	

2. *Universal Constants.*

Acceleration due to gravity.....	g	
Mechanical equivalent of heat	J	
Avogadro's constant [number of molecules in 1 gram-molecule (mole)]	N	
Gas constant per mole	R	
Faraday's constant (number of coulombs per gram-equivalent of an ion)	F	
Charge on an electron	e	

3. *General Physics and Chemistry.*

Length	l	
Height.....	h	
Mass	m	
Time	t	
Volume	v, V	
Density (mass per unit volume)	d	
Pressure	p, P	
Concentration	c, C	
Mole fraction	x	
Critical constants: pressure, volume, tem- perature (centigrade), temperature (absolute), density	$\left\{ \begin{array}{l} p_c, v_c, \\ t_c, T_c, \\ d_c \end{array} \right.$	
Reduced quantities: pressure, volume, temperature, density	$\left\{ \begin{array}{l} p_r, v_r, \\ t_r, T_r, d_r \end{array} \right.$	
van der Waals's constants	a, b	
Fluidity	ϕ	
Viscosity	η	
Surface tension	γ	
Diffusion coefficient	Δ	
Atomic weight	A	
Molecular weight	M	
Velocity coefficient of reaction	k	
Equilibrium constant	$K, (K_e, K_p)$	
van't Hoff coefficient	i	
Degree of dissociation (electrolytic, thermal, etc.)		

4. Heat and Thermodynamics.

	Usual symbol.	Alternative symbol.
Temperature (centigrade)	t	θ
Temperature (absolute)	T	
Critical temperature	t_c, T_c	
Reduced temperature	t_r, T_r	
Critical solution temperature	t_{cs}, T_{cs}	
Quantity of heat	Q	
Entropy	S	
Specific heat	c	
Specific heat at constant pressure	c_p	
Specific heat at constant volume	c_v	
Ratio of specific heats, $c_p : c_v$	γ	
Molecular heat	C	
Molecular heat at constant pressure	C_p	
Molecular heat at constant volume	C_v	
Latent heat per gram	l	
Latent heat per mole	L	
Maximum work (diminution of free energy)	A	

5. Optics.

Wave-length of light	λ	
Refractive index	n	
Specific refractive power (Gladstone and Dale)	$v_d, [v_d]_d^t$	
Specific refractive power (Lorentz and Lorenz)	$v_L, [v_L]_L^t$	
Molecular refractive power	R_d, R_L $[R_d]_d^t, [R_L]_L^t$	
Angle of optical rotation	α	
Specific rotatory power	$[\alpha]$	
Molecular rotatory power	$M[\alpha]$	
Specific magnetic rotation	$[\omega]$	
Molecular magnetic rotation	$M[\omega]$	

6. Electricity and Magnetism.

Quantity of electricity	Q	
Current intensity	I	
Resistance	R	W
Electromotive force	E	
Electrode potential, or discharge potential of an ion	E	e
Electrode potential referred to the normal hydrogen or normal calomel electrode respectively, the potential of which is taken as zero	E_h, E_c	e_h, e_c
Normal potential, i.e., the electrode potential referred to the normal hydrogen or normal calomel electrode respectively, when the solution is molecular-normal in respect of all participating substances and ions of variable concentration	${}_0E_h, {}_0E_c$	${}_0e_h, {}_0e_c$
Dielectric constant	ϵ	
Conductivity (specific conductance)	κ	
Equivalent conductivity	Λ	
Equivalent conductivity at different dilutions—volumes in litres containing 1 gram-equivalent	$\Lambda_{10}, \Lambda_{20}, \Lambda_{\infty}$	

6. *Electricity and Magnetism*—(continued).

	Usual symbol.	Alternative symbol.
Equivalent conductivity of kation and of anion	Λ_k, Λ_a	
Equivalent conductivity of specified ions...	Λ_K, Λ_A	
Molecular conductivity	μ	
Velocity of kation and of anion in cm./sec. when the potential gradient is 1 volt per cm.	U_k, U_a	
Transport number of kation and of anion ...	n_k, n_a	
Magnetic permeability	μ	
Magnetic susceptibility	κ	

List of Symbols, Arranged Alphabetically.

Symbol.	Name of quantity.
A	Atomic weight; maximum work.
a	Van der Waals's constant.
b	Van der Waals's constant.
C	Concentration; molecular heat.
c	Concentration; specific heat.
C_p, C_v	Molecular heat at constant pressure, and at constant volume.
c_p, c_v	Specific heat at constant pressure, and at constant volume.
D	Alternative symbol for density.
d	Diameter; total differential; density.
d_c	Critical density.
d_r	Reduced density.
E	Electromotive force; electrode potential.
e	Base of Napierian logarithms; charge on an electron.
E_h, E_n	Electrode potential referred to the normal hydrogen or the normal calomel electrode, respectively, the potential of which is taken as zero.
${}_0E_h, {}_0E_c$	Normal potential, that is, the electrode potential referred to the normal hydrogen or the normal calomel electrode respectively, when the solution is molecular-normal in respect of all participating substances and ions of variable concentration.
F	Faraday's constant (number of coulombs per gram-equivalent of an ion).
g	Acceleration due to gravity.
h	Height.
I	Current.
i	Van't Hoff's coefficient.
J	Mechanical equivalent of heat.
K	Equilibrium constant.
K_m, K_p	Equilibrium constant, when molar concentrations and partial pressures respectively are employed.
k	Velocity coefficient of reaction.
L	Latent heat per mole.
l	Length; latent heat per gram.
M	Molecular weight.
$M[\alpha]$	Molecular rotatory power.
$M[\omega]$	Molecular magnetic rotatory power.
m	Mass.
N	Avogadro's constant (Loschmidt's number) or number of molecules in 1 gram-molecule.
n	Refractive index.

List of Symbols, Arranged Alphabetically—(continued).

Symbol.	Name of quantity.
n_+, n_-	Transport number of kation and of anion.
n_r	Refractive index (alternative symbol).
P	Pressure.
p	Pressure.
p_c, p_r	Critical pressure : reduced pressure.
Q_e	Quantity of heat; quantity of electricity.
R	Gas constant per mole; electrical resistance.
R_G, R_L	Molecular refractive power, according to Gladstone and Dale, and to Lorentz and Lorenz respectively.
r	Radius.
r_G, r_L	Specific refractive power according to Gladstone and Dale, and to Lorentz and Lorenz respectively.
S	Entropy.
T	Absolute temperature.
T_c	Critical temperature (on the absolute scale).
T_r	Reduced temperature (absolute).
T_{cs}	Critical solution temperature (absolute).
t	Time; temperature (centigrade).
t_c	Critical temperature (centigrade).
t_{cs}	Critical solution temperature (centigrade).
t_r	Reduced temperature (centigrade).
U_+, U_-	Velocity of kation and of anion in cm./sec. when the potential gradient is 1 volt per cm.
V	Volume.
v	Volume.
v_c, v_r	Critical volume : reduced volume.
W	Electrical resistance (alternative symbol).
x	Mole fraction.
α	Degree of dissociation (electrolytic, thermal, etc.); angle of optical rotation.
$[\alpha]$	Specific rotatory power.
γ	Surface tension; ratio of specific heats.
Δ	Diffusion coefficient.
δ	Variation.
∂	Partial differential.
ϵ	Electrode potential (alternative symbol); dielectric constant.
ϵ_h, ϵ	Electrode potential referred to the normal hydrogen or the normal calomel electrode respectively, the potential of which is taken as zero (alternative symbols).
ϵ^h, ϵ^e	Normal potential, that is, the electrode potential referred to the normal hydrogen or the normal calomel electrode respectively, when the solution is molecular-normal in respect of all participating substances and ions of variable concentration (alternative symbols).
η	Viscosity.
θ	Temperature (centigrade), (alternative symbol).
κ	Specific conductance (conductivity); magnetic susceptibility.
Λ	Equivalent conductivity.
$\Lambda_{10}, \Lambda_{20}, \Lambda_{20}$	Equivalent conductivity at different dilutions (volumes in litres containing 1 gram-equivalent).
Λ_k, Λ_a	Equivalent conductivity of kation and of anion.
λ	Wave-length of light.
μ	Molecular conductivity; magnetic permeability
π	Ratio of circumference to diameter.
Σ	Summation.
σ	Surface tension (alternative symbol).
ϕ	Fluidity.
$[\omega]$	Specific magnetic rotation.

JOURNALS FROM WHICH ABSTRACTS ARE MADE.

The following is a list of Journals from which abstracts are made (directly or indirectly) by the Chemical Society and the Society of Chemical Industry. The abbreviated titles printed in italics represent Journals abstracted by the Chemical Society, those printed in roman type being abstracted by the Society of Chemical Industry. Of the former Journals those indicated by an asterisk are also abstracted by the Society of Chemical Industry.

ABBREVIATED TITLE.	JOURNAL.
<i>Abh. Böhm. Akad.</i> . . .	Abhandlungen der Böhmischen Akademie.
<i>Abh. Deut. Naturwiss. Med. Ver. Böhmen.</i> . . .	Abhandlungen der Deutschen Naturwissenschaftlichen und Medizinischen Verein, Böhmen.
<i>Acad. Sci. Fennicae</i> . . .	Acta Societatis Scientiarum Fennicae.
<i>Agric. Bull. F. M. S.</i> . . .	Agricultural Bulletin of the Federated Malay States.
<i>Agric. J. India</i> . . .	Agricultural Journal of India.
<i>Agric. Ledger</i> . . .	Agricultural Ledger.
<i>Agric. Res. Inst., Pusa Rep. (Bull.)</i> . . .	Agricultural Research Institute, Pusa, Report and Bulletins.
<i>Allgem. Z. Bierbrau. u. Malzfabr.</i> . . .	Allgemeine Zeitschrift für Bierbrauerei und Malzfabrikation.
<i>Amer. J. Bot.</i> . . .	American Journal of Botany.
<i>Amer. J. Dis. Children</i> . . .	American Journal of Diseases of Children.
<i>Amer. J. Pharm.</i> . . .	American Journal of Pharmacy.
<i>Amer. J. Physiol.</i> . . .	American Journal of Physiology.
<i>Amer. J. Publ. Health</i> . . .	American Journal of Public Health.
<i>*Amer. J. Sci.</i> . . .	American Journal of Science.
<i>Amer. Min.</i> . . .	American Mineralogist.
<i>Anal. Fis. Quím.</i> . . .	Anales de la Sociedad Española de Física y Química.
<i>Anal. Soc. Quím. Argentina</i> . . .	Anales de la Asociación Química Argentina.
<i>*Analyst</i> . . .	Analyst.
<i>Annalen</i> . . .	Justus Liebig's Annalen der Chemie.
<i>Ann. Bot.</i> . . .	Annals of Botany.
<i>Ann. di Bot.</i> . . .	Annali di Botanica.
<i>Ann. Chim.</i> . . .	Annales de Chimie.
<i>*Ann. Chim. Analyt.</i> . . .	Annales de Chimie Analytique et de Chimie Appliquée.
<i>Ann. Falsif.</i> . . .	Annales des Falsifications.
<i>Ann. hyg. pub. med. legale.</i> . . .	Annales d'hygiène publique et de médecine légale.
<i>Ann. Inst. Pasteur</i> . . .	Annales de l'Institut Pasteur.
<i>Ann. Physik</i> . . .	Annalen der Physik.
<i>Ann. Physique</i> . . .	Annales de Physique.
<i>Ann. R. Staz. Chim. Agrar. Sperim.</i> . . .	Annali della R. Stazione Chimica Agraria Sperimentale di Roma.
<i>Ann. sci. Univ. Jassy</i> . . .	Annales scientifiques de l'Université de Jassy.
<i>Ann. Soc. Geol. Belg.: Publ. rel. au Congo Belge</i> . . .	Annales de la Société géologique de Belgique: Publications relatives au Congo Belge.
<i>Apoth. Zeit.</i> . . .	Apotheker-Zeitung.
<i>Arch. Gebiet. Physik, Math. Chem.</i> . . .	Arbeiten aus dem Gebiete der Physik, Mathematik und Chemie.
<i>Arch. Anat. Physiol.</i> . . .	Archiv für Anatomie und Physiologie.
<i>Arch. Entw.-mech. Org.</i> . . .	Archiv für Entwicklungsmechanik der Organismen.
<i>Arch. expt. Path. Pharm.</i> . . .	Archiv für experimentelle Pathologie und Pharmakologie.
<i>Arch. Farm. sperim. Sci. aff.</i> . . .	Archivio di Farmacologia sperimentale e Scienze affini.
<i>Arch. Fisiol.</i> . . .	Archivio di Fisiologia.
<i>Arch. Int. Med.</i> . . .	The Archives of Internal Medicine.
<i>Arch. Ital. Biol.</i> . . .	Archives italiennes de Biologie.
<i>Arch. Med. Pharm. milit.</i> . . .	Archives de Médecine et de Pharmacie militaires.

ABBREVIATED TITLE.	JOURNAL.
<i>Arch. Néerland.</i> . . .	Archives Néerlandaises de sciences exactes et naturelles.
<i>Arch. Néerland. physiol.</i> . . .	Archives Néerlandaises de physiologie de l'homme et des animaux.
* <i>Arch. Pharm.</i> . . .	Archiv der Pharmazie.
<i>Arch. Sci. phys. nat.</i> . . .	Archives des Sciences physiques et naturelles.
<i>Arch. Suikerind. Ned. Indie</i> . . .	Archief voor de Suikerindustrie in Nederlandsch-Indie.
<i>Arkiv Kem. Min. Geol.</i> . . .	Arkiv för Kemi, Mineralogi och Geologi.
* <i>Atti R. Accad. Lincei</i> . . .	Atti della Reale Accademia dei Lincei.
<i>Atti R. Accad. Sci. Torino</i> . . .	Atti della Reale Accademia delle Scienze di Torino.
<i>Atti R. Ist. Veneto Sci.</i> . . .	Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti.
<i>Aust. Pharm. Notes</i> . . .	Australian Pharmaceutical Notes and News
<i>Beitr. Min. Japan</i> . . .	Beiträge zur Mineralogie von Japan.
<i>Berg. Hüttenm. Rundsch.</i> . . .	Berg- und Hüttenmannisches Rundschau.
* <i>Ber.</i> . . .	Berichte der Deutschen chemischen Gesellschaft.
<i>Ber. Deut. bot. Ges.</i> . . .	Berichte der Deutschen botanischen Gesellschaft.
* <i>Ber. Deut. pharm. Ges.</i> . . .	Berichte der Deutschen pharmazeutischen Gesellschaft.
<i>Ber. Oberhess. Ges. Natur. Heilkunde.</i> . . .	Berichte der Oberhessischen Gesellschaft für Natur- und Heilkunde zu Gießen.
<i>Ber. Ohara Inst. landw. Forsch.</i> . . .	Berichte des Ohara Instituts für landwirtschaftliche Forschungen.
<i>Ber. Sachs. Akad. Wiss.</i> . . .	Berichte über die Verhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig.
<i>Berlin. Klin. Woch.</i> . . .	Berliner Klinische Wochenschrift.
* <i>Bied. Zentr.</i> . . .	Biedermann's Zentralblatt für Agrikulturchemie und rationellen Landwirtschafts-Betrieb.
<i>Biochem. Bull.</i> . . .	Biochemical Bulletin.
* <i>Biochem. J.</i> . . .	Biochemical Journal.
* <i>Biochem. Z.</i> . . .	Biochemische Zeitschrift.
<i>Bd. of Trade J.</i> . . .	Board of Trade Journal.
<i>Bol. Acad. Nac. Ciencias, Cordoba.</i> . . .	Boletín de la Academia Nacional des Ciencias, Cordoba.
* <i>Boll. Chim. farm.</i> . . .	Bollettino Chimico farmaceutico.
<i>Boll. Soc. Geol. Ital.</i> . . .	Bollettino della Società Geologica Italiana.
<i>Boll. Soc. Med. Chirurg.</i> . . .	Bollettino della Società Medico-Chirurgica, Pavia.
<i>Bot. Centr.</i> . . .	Botanisches Centralblatt.
<i>Bot. Gaz.</i> . . .	Botanical Gazette.
<i>Brass. Malt.</i> . . .	Brasserie et Malterie.
<i>Brau- u. Malzind.</i> . . .	Brau- u. Malzindustrie.
<i>Braunkohle</i> . . .	Braunkohle.
* <i>Brennstoff-Chem.</i> . . .	Brennstoff-Chemie.
<i>Brewers' J.</i> . . .	Brewers' Journal.
<i>Brit. J. Phot.</i> . . .	British Journal of Photography.
<i>Brit. Med. J.</i> . . .	British Medical Journal.
<i>Brit. Pat.</i> . . .	British Patent.
<i>Buletinul Chim.</i> . . .	Buletinul Chimie.
<i>Bul. Soc. Chim. România</i> . . .	Buletinul Societății de Chimie din România.
<i>Bul. Soc. Romane Stiin.</i> . . .	Buletinul Societății Romane de Științe.
<i>Bull. Acad. roy. Belg.</i> . . .	Académie royale de Belgique—Bulletin de la Classe des Sciences.
<i>Bull. Acad. Sci. Roumaine</i> . . .	Bulletin de la Section Scientifique de l'Académie Roumaine.
<i>Bull. Agric. Intell.</i> . . .	Bulletin of the Bureau of Agricultural Intelligence and of Plant Diseases.
<i>Bull. Assoc. Chim. Sucri.</i> . . .	Bulletin de l'Association des Chimistes de Sucrerie et de Distillerie.

ABBREVIATED TITLE.	JOURNAL.
Bull. Bureau of Standards (U.S.A.).	Bulletin of the Bureau of Standards (U.S.A.).
Bull. Com. Géol. Finlande.	Bulletin de la Commission Géologique de Finlande.
Bull. Forest Exp. Stat. Meguro.	Bulletin of the Forest Experiment Station, Meguro, Tokyo.
Bull. gén. Thérap.	Bulletin général de Thérapentique médicale, chirurgicale, obstétricale.
Bull. Géol. d'Alsace.	Bulletin du Service de la Carte Géologique d'Alsace et de Lorraine.
Bull. Géol. Inst. Univ. Upsala.	Bulletin of the Geological Institution of the University of Upsala.
Bull. Géol. Soc. Amer.	Bulletin of the Geological Society of America.
Bull. Géol. Survey, U.S.A.	Bulletin of the U.S. Geological Survey.
Bull. Géol. Survey, West Australia.	Bulletin of the Geological Survey, West Australia.
Bull. Imp. Inst.	Bulletin of the Imperial Institute.
Bull. Indian Ind. Lab.	Bulletin of Indian Industries and Labour.
Bull. Johns Hopkins Hospital.	Bulletin of the Johns Hopkins Hospital.
Bull. School Mines and Met., Univ. Missouri.	Bulletin of the School of Mines and Metallurgy, University of Missouri.
Bull. Sci. Pharmacol.	Bulletin des Sciences Pharmacologiques.
*Bull. Soc. chim.	Bulletin de la Société chimique de France.
*Bull. Soc. chim. Belg.	Bulletin de la Société chimique de Belgique.
Bull. Soc. Chim. biol.	Bulletin de la Société de Chimie biologique.
Bull. Soc. d'Encour.	Bulletin de la Société d'Encouragement pour l'Industrie Nationale.
Bull. Soc. franç. Min.	Bulletin de la Société française de Minéralogie.
Bull. Soc. Franç. Phot.	Bulletin de la Société Française de Photographie.
Bull. Soc. Ind. Mulhouse.	Bulletin de la Société Industrielle de Mulhouse.
Bull. Soc. Ind. Nord.	Bulletin de la Société Industrielle du Nord de la France.
Bull. Soc. Oural. Sci. Nat.	Bulletin de la Société Ouralienne des Amateurs des Sciences Naturelles à Catherineberg.
Bull. Soc. Pharm. Bordeaux.	Bulletin des Travaux de la Société de Pharmacie de Bordeaux.
Bull. Wellcome Trop. Res. Lab.	Bulletin of the Wellcome Tropical Research Laboratory.
Cairo Sci. J.	Cairo Scientific Journal.
Canada Dept. Mines Publ.	Canada Department of Mines Publications.
*Canadian Chem. Met.	Canadian Chemistry and Metallurgy.
Canadian Med. Assoc. J.	Canadian Medical Association Journal.
Caoutchouc et Gutta-Percha.	Le Caoutchouc et le Gutta-Percha.
Casopis. Math. Fysiky.	Casopsis pro pěstování Matematiky a Fysiky.
*Centr. Bakt. Par.	Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten.
Centr. Min.	Centralblatt für Mineralogie, Geologie und Palaeontologie.
Ch. of Comm. J.	Chamber of Commerce Journal.
Chem. App.	Chemische Apparatur.
Chem. Erde.	Chemie der Erde.
Chem. Ind.	Chemische Industrie.
Chem. Listy.	Chemické Listy pro Vědu a Průmysl. Organ de la "Česká chemická Společnost pro Vědu a Průmysl."
*Chem. and Met. Eng.	Chemical and Metallurgical Engineering.
*Chem. News.	Chemical News.
Chem. Trade J.	Chemical Trade Journal.
Chem. Umschau.	Chemische Umschau auf dem Gebiete der Fette, Öle, Wachse, und Harze.
*Chem. Weekblad.	Chemisch Weekblad.

ABBREVIATED TITLE.	JOURNAL.
* <i>Chem.-Ztg.</i>	Chemiker-Zeitung.
<i>Chem. Z.</i>	Chemische Zeitschrift.
* <i>Chem. Zentr.</i>	Chemisches Zentralblatt.
<i>Chem. and Drug.</i>	Chemist and Druggist.
* <i>Chim. et Ind.</i>	Chimie et Industrie.
<i>Collegium</i>	Collegium.
* <i>Compt. rend.</i>	Comptes rendus hebdomadaires des Séances de l'Académie des Sciences.
<i>Compt. rend. Soc. Biol.</i>	Comptes rendus hebdomadaires de Séances de la Société de Biologie.
Comptes rend. Trav. Lab. Carlsberg	Comptes rendus des Travaux du Laboratoire Carlsberg.
D. R. P.	Deutsches Reichs-Patent.
Dept. Chem. S. Australia, Bull.	Department of Chemistry, South Australia, Bulletins.
<i>Deut. med. Woch.</i>	Deutsche medizinische Wochenschrift.
<i>Econ. Geol.</i>	Economic Geology.
<i>Econ. Proc. Roy. Dubl. Soc.</i>	Economic Proceedings of the Royal Dublin Society.
<i>Elektrochem. Z.</i>	Elektrochemische Zeitschrift.
<i>Engineering</i>	Engineering.
<i>Eng. and Min. J.</i>	Engineering and Mining Journal.
<i>Exper. Stat. Rec.</i>	Experimental Station Record.
<i>Farben-Ztg.</i>	Farben-Zeitung.
<i>Fermentforsch.</i>	Fermentforschung.
<i>Feuerungstechnik</i>	Feuerungstechnik.
<i>Flora</i>	Flora.
<i>Földtani Közlöny</i>	Földtani Közlöny.
<i>Fr. Pat.</i>	French Patent.
<i>Gas J.</i>	Gas Journal.
<i>Gas World</i>	Gas World.
* <i>Gazzetta</i>	Gazzetta chimica italiana.
<i>Geol. För. Förh.</i>	Geologiska Föreningens i Stockholm Förhandlingar.
<i>Geol. Mag.</i>	Geological Magazine.
Gerber	Gerber.
* <i>Giorn. Chim. Ind. Appl.</i>	Giornale di Chimica Industriale ed Applicata.
<i>Gummi-Ztg.</i>	Gummi-Zeitung.
<i>Handl. Vist. Nat.</i>	Handelingen van het Vijftende Natuur.
Hawaii Agric. Exp. Stat. Bull.	Hawaii Agricultural Experiment Station Bulletins.
<i>Heart</i>	Heart.
<i>Helv. Chim. Acta</i>	Helvetica Chimica Acta.
<i>Hyg. Rundsch.</i>	Hygienische Rundschau.
<i>Indian J. Med. Res.</i>	Indian Journal of Medical Research.
<i>India-rubber J.</i>	India-rubber Journal.
<i>Int. Sugar J.</i>	International Sugar Journal.
Iron Steel Inst. Carnegie Schol. Mem.	Iron and Steel Institute, Carnegie Scholarship Memoirs.
<i>Jahrb. Geol. Reichsanst.</i>	Jahrbuch der geologischen Reichsanstalt.
<i>Jahrb. Min.</i>	Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie.
<i>Jahrb. Min. Beil.-Bd.</i>	Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie, Beilage-Band.
<i>Jahrb. Radioaktiv. Elektronik.</i>	Jahrbuch der Radioaktivität und Elektronik.
<i>Jahrb. wiss. Bot.</i>	Jahrbuch für wissenschaftliche Botanik.
<i>Jahresber. Ges. vaterl. Kultur.</i>	Jahresbericht der schlesischen Gesellschaft für vaterländische Kultur.
<i>Jernk. Ann.</i>	Jernkontorets Annaler.
* <i>J. Agric. Res.</i>	Journal of Agricultural Research.

ABBREVIATED TITLE.	JOURNAL.
* <i>J. Agric. Sci.</i> . . .	Journal of Agricultural Science.
* <i>J. Amer. Ceram. Soc.</i> . . .	Journal of the American Ceramic Society.
* <i>J. Amer. Chem. Soc.</i> . . .	Journal of the American Chemical Society.
<i>J. Amer. Leather Chem. Assoc.</i> . . .	Journal of the American Leather Chemists' Association.
<i>J. Amer. Med. Assoc.</i> . . .	Journal of the American Medical Association.
<i>J. Assoc. Off. Agric. Chem.</i> . . .	Journal of the Association of Official Agricultural Chemists.
* <i>J. Biol. Chem.</i> . . .	Journal of Biological Chemistry, New York.
<i>J. Canad. Min. Inst.</i> . . .	Journal of the Canadian Mining Institute.
<i>J. Chem. Ind. Tokyo</i> . . .	See <i>Kōgyō-Kwagaku-Zasshi</i> .
<i>J. Chem. Met. Soc. S. Africa</i> . . .	Journal of the Chemical, Metallurgical, and Mining Society of South Africa.
<i>J. Chem. Soc. Japan.</i> . . .	Journal of the Chemical Society of Japan. (Nippon Kwagaku Kwai Shi.)
<i>J. Chim. physique</i> . . .	Journal de Chimie physique.
<i>J. Coll. Agric. Tohoku</i> . . .	Journal of the College of Agriculture, Tohoku Imperial University, Japan.
<i>J. Coll. Agric. Tokyo</i> . . .	Journal of the College of Agriculture, Imperial University of Tokyo, Japan.
<i>J. Coll. Eng. Tokyo</i> . . .	Journal of the College of Engineering, Imperial University of Tokyo.
* <i>J. Coll. Sci. Tokyo</i> . . .	Journal of the College of Science, Imperial University of Tokyo.
<i>J. Exp. Med.</i> . . .	Journal of Experimental Medicine.
* <i>J. Franklin Inst.</i> . . .	Journal of the Franklin Institute.
<i>J. Gasbeleucht.</i> . . .	Journal für Gasbeleuchtung und Wasserversorgung.
<i>J. gen. Physiol.</i> . . .	Journal of general Physiology.
<i>J. Genetics</i> . . .	Journal of Genetics.
<i>J. Geol.</i> . . .	Journal of Geology.
<i>J. Geol. Soc. Tokyo</i> . . .	Chishitsugaku Zasshi (Journal of the Geological Society of Tokyo).
<i>J. Hygiene</i> . . .	Journal of Hygiene.
* <i>J. Ind. Eng. Chem.</i> . . .	Journal of Industrial and Engineering Chemistry.
<i>J. Indian Ind. Lab.</i> . . .	Journal of Indian Industries and Labour.
* <i>J. Indian Inst. Sci.</i> . . .	Journal of the Indian Institute of Science.
<i>J. Inst. Brewing</i> . . .	Journal of the Institute of Brewing.
<i>J. Inst. Metals</i> . . .	Journal of the Institute of Metals.
<i>J. Inst. Petroleum Tech.</i> . . .	Journal of the Institution of Petroleum Technologists.
<i>J. Iron and Steel Inst.</i> . . .	Journal of the Iron and Steel Institute.
<i>J. Landw.</i> . . .	Journal für Landwirtschaft.
<i>J. Marine Biol. Assoc. U.K.</i> . . .	Journal of the Marine Biological Association of the United Kingdom.
<i>J. Med. Res.</i> . . .	Journal of Medical Research.
<i>J. Min. Agric.</i> . . .	Journal of the Ministry of Agriculture.
<i>J. Path. Bact.</i> . . .	Journal of Pathology and Bacteriology.
<i>J. Opt. Soc. Amer.</i> . . .	Journal of the Optical Society of America.
* <i>J. Pharm. Chim.</i> . . .	Journal de Pharmacie et de Chimie.
<i>J. Pharm. Expt. Ther.</i> . . .	Journal of Pharmacology and Experimental Therapeutics.
<i>J. Pharm. Soc. Japan</i> . . .	Journal of the Pharmaceutical Society of Japan (Yakugakuzasshi).
* <i>J. Physical Chem.</i> . . .	Journal of Physical Chemistry.
<i>J. Physiol.</i> . . .	Journal of Physiology.
<i>J. Physiol. Path. gen.</i> . . .	Journal de Physiologie et de Pathologie générale.
<i>J. Phys. Radium</i> . . .	Journal de Physique et le Radium.
* <i>J. pr. Chem.</i> . . .	Journal für praktische Chemie.
<i>J. Proc. Asiatic Soc. Bengal.</i> . . .	Journal and Proceedings of the Asiatic Society of Bengal.

ABBREVIATED TITLE.	JOURNAL.
<i>J. Roy. Agric. Soc.</i> . . .	Journal of the Royal Agricultural Society.
<i>J. Roy. Army Med. Corps</i> . . .	Journal of the Royal Army Medical Corps.
<i>J. Roy. Hort. Soc.</i> . . .	Journal of the Royal Horticultural Society.
<i>J. Roy. Soc. New South Wales.</i>	Journal and Proceedings of the Royal Society of New South Wales.
<i>J. Roy. Soc. West Australia</i>	Journal of the Royal Society of West Australia.
<i>*J. Russ. Phys. Chem. Soc.</i>	Journal of the Physical and Chemical Society of Russia.
<i>J. Scot. Met. Soc.</i> . . .	Journal of the Scottish Meteorological Society.
<i>J. Soc. Arts</i> . . .	Journal of the Royal Society of Arts.
<i>J. Soc. Dyers and Col.</i> . . .	Journal of the Society of Dyers and Colourists.
<i>J. Soc. Leather Trades Chem.</i>	Journal of the Society of Leather Trades Chemists.
<i>J. Soc. Glass Technology</i> . . .	Journal of the Society of Glass Technology.
<i>J. S. African Assoc. Anal. Chem.</i>	Journal of the South African Association of Analytical Chemists.
<i>J. Textile Inst.</i> . . .	Journal of the Textile Institute.
<i>J. Usines Gaz</i> . . .	Journal des Usines à Gaz.
<i>J. Washington Acad. Sci.</i> . . .	Journal of the Washington Academy of Science.
<i>J. West Scotland Iron Steel Inst.</i>	Journal of the West of Scotland Iron and Steel Institute.
<i>K. Svenska Vet.-Akad. Handl.</i>	Kongliga Svenska Vetenskaps Akademiens Handlingar.
<i>Kentucky Exp. Stat. Bull.</i>	Kentucky Experimental Station, Bulletin.
<i>Keram. Rundsch.</i> . . .	Keramisch Rundschau.
<i>Kew Bull.</i> . . .	Kew Bulletin.
<i>Kongl. Landtbr. Handl. Tidskr.</i>	See Bull. Agric. Intell.
<i>Kōgyō-Kwagaku-Zasshi (J. Chem. Ind. Japan).</i>	Kōgyō-Kwagaku-Zasshi (Journal of Chemical Industry, Japan).
<i>*Kolloid Z.</i> . . .	Kolloid Zeitschrift.
<i>*Koll. Chem. Beihefte</i>	Kolloid-chemische Beihefte.
<i>Kosmos</i> . . .	Kosmos (Lernberg).
<i>Kühn-Archiv</i> . . .	Kühn-Archiv.
<i>Kunststoffe</i> . . .	Kunststoffe.
<i>Lancet</i> . . .	The Lancet.
<i>Landw. Jahrb.</i> . . .	Landwirtschaftliche Jahrbücher.
<i>Landw. Versuchs.-Stat.</i>	Die landwirtschaftlichen Versuchs-Stationen.
<i>Leather Trades Rev.</i> . . .	Leather Trades Review.
<i>Louisiana Bull.</i> . . .	Louisiana Bulletin.
<i>Louisiana Planter</i> . . .	Louisiana Planter.
<i>Lunds. Univ. Årsskr.</i> . . .	Lunds Universitets Års-skrift.
<i>Math. és Termész. Ért.</i>	Mathematikai és Természettudományi Értesítő, Budapest.
<i>Méml. K. Vetenskapsakad. Nobel-Inst.</i>	Meddelanden från Kongl.-Vetenskapsakademiens Nobel-Institut.
<i>Medd. on Grönland</i> . . .	Meddelser on Grönland.
<i>Med. Genes. Lab. Weltverden.</i>	Mededelingen uit het Geneeskundig Laboratorium te Weltevreden.
<i>Med. Chron.</i> . . .	Medical Chronicle.
<i>Med. Klinik</i> . . .	Medizinische Klinik.
<i>Mem. Acad. Lincei</i> . . .	Memorie della Reale Accademia dei Lincei.
<i>Mem. Acad. Sci. Torino</i>	Memorie della Reale Accademia delle Scienze di Torino.
<i>Mem. Coll. Sci. Kyōtō</i> . . .	Memoirs of the College of Science, Kyōtō Imperial University.
<i>Mem. Coll. Sci. and Eng. Kyōtō Imp. Univ.</i>	Memoirs of the College of Science and Engineering, Kyōtō Imperial University.
<i>Mem. Dept. Agric. India</i> . . .	Memoirs of the Department of Agriculture in India.
<i>Mem. Manchester Phil. Soc.</i>	Memoirs and Proceedings of the Manchester Literary and Philosophical Society.

ABBREVIATED TITLE.	JOURNAL.
Mem. Soc. Ing. Civ.	Mémoires de la Société des Ingénieurs Civils de France.
Mem. Soc. Toscana Sci. Nat.	Memorie della Società Toscana di Scienze naturali residente in Pisa.
Metall u. Erz	Metall und Erz.
Metrop. Water Bd. Rep.	Metropolitan Water Board Reports.
Milch. Zentr.	Milchwirtschaftliches Zentralblatt.
Min. Mag.	Mineralogical Magazine and Journal of the Mineral- ogical Society.
Mitt. Ges. Warme.	Mitteilungen des Gesellschaft für Warmewirtschaft.
Mitt. Materialprüf.	Mittheilungen aus dem Materialprüfungsamt zu Gross- Lichterfelde West.
Mitt. med. Ges. Tokyo	Mittheilungen der medizinischen Gesellschaft zu Tokyo.
Mitt. Naturforsch. Ges. Halle.	Mittheilungen der Naturforschenden Gesellschaft zu Halle.
Mitt. Path. Inst. K. Univ. Japan.	Mittheilungen aus dem pathologischen Institut der Kaiserlichen Universität zu Sendai, Japan.
*Monatsh.	Monatshefte für Chemie und verwandte Teile anderer Wissenschaften.
Monatsh. Math. Physik	Monatshefte für Mathematik und Physik.
*Mon. Sci.	Moniteur Scientifique.
Month. Not. Roy. Astr. Soc.	Monthly Notices of the Royal Astronomical Society, London.
Munch. med. Woch.	Münchener medizinische Wochenschrift.
Nachr. Ges. Wiss. Göt- tingen.	Nachrichten von der Gesellschaft der Wissenschaften zu Göttingen.
Nature	Nature.
Naturwiss.	Die Naturwissenschaften.
Naturr. Rdsch.	Naturwissenschaftliche Rundschau.
New York Agr. Expt. Sta. Bull.	New York Agricultural Experiment Station Bulletin.
New Zealand Dominion Laby. Rept.	New Zealand Dominion Laboratory Reports.
New Zealand Jnl. of Science and Technology	New Zealand Journal of Science and Technology.
Nippon Kwagaku Kwa Shi (J. Chem. Soc. Japan).	Nippon Kwagaku Kwa Shi (Journal of the Chemical Society of Japan).
Nova Acta Soc. Sci.	Nova Acta Regiae Societatis Scientiarum Upsaliensis.
Nuovo Cim.	Il Nuovo Cimento.
Öfvers. Finska Vet.-Soc.	Öfversigt af Finska Vetenskaps-Societätens Förhand- lingar, Helsingfors.
*Oesterr. Chem.-Zeit.	Oesterreichische Chemiker-Zeitung.
Oil and Colour Trades J. . . .	Oil and Colour Trades Journal.
Oil, Paint, and Drug Rep. . .	Oil, Paint, and Drug Reporter.
Oversigt Danske Vid. S. Isk.	Oversigt over det Kongelige Danske Videnskabs- Selskabs Forhandlingar.
Pahasapa Quart.	Pahasapa Quarterly
Paper	Paper.
Papierfabr.	Papier-Fabrikant.
Perf. and Essent. Oil Rec.	Perfumery and Essential Oil Record.
Per. spis. Sofia	Periodicesko spisanie Sofia.
Petroleum	Petroleum.
Pflüger's Archiv.	Archiv für die gesammte Physiologie des Menschen und der Thiere.
Pharm. J.	Pharmaceutical Journal.
*Pharm. Weekblad	Pharmaceutisch Weekblad.
*Pharm. Zentr.-h.	Pharmazeutische Zentralhalle.
Phil. Mag.	Philosophical Magazine (The London, Edinburgh and Dublin).

ABBREVIATED TITLE.	JOURNAL.
<i>Phil. Trans.</i> . . .	Philosophical Transactions of the Royal Society of London.
Philippine J. Sci. . .	Philippine Journal of Science.
Phot. J.	Photographic Journal.
Phot. Korr.	Photographische Korrespondenz.
<i>Physical Rev.</i> . . .	Physical Review.
<i>Physikal. Z.</i>	Physikalische Zeitschrift.
<i>Proc. Amer. Phil. Soc.</i> . .	Proceedings of the American Philosophical Society.
<i>Proc. Amer. Physiol. Soc.</i> .	Proceedings of the American Physiological Society.
* <i>Proc. Amer. Soc. Biol. Chem.</i>	Proceedings of the American Society of Biological Chemists.
<i>Proc. Amer. Soc. Civ. Eng.</i>	Proceedings of the American Society of Civil Engineers.
<i>Proc. Amer. Soc. Testing Materials</i>	Proceedings of American Society for Testing Materials.
<i>Proc. Austral. Inst. Min. Met.</i>	Proceedings of the Australasian Institute of Mining and Metallurgy.
<i>Proc. Camb. Phil. Soc.</i> . .	Proceedings of the Cambridge Philosophical Society.
<i>Proc. Durham Phil. Soc.</i> . .	Proceedings of the Durham Philosophical Society.
<i>Proc. Eng. Soc. W. Pa.</i> . .	Proceedings of the Engineers' Society of Western Pennsylvania.
<i>Proc. Inst. Civ. Eng.</i> . . .	Proceedings of the Institution of Civil Engineers.
<i>Proc. Inst. Mech. Eng.</i> . .	Proceedings of the Institution of Mechanical Engineers.
* <i>Proc. K. Akad. Wetensch. Amsterdam.</i>	Koninklijke Akademie van Wetenschappen te Amsterdam. Proceedings (English version).
<i>Proc. Nat. Acad. Sci.</i> . . .	Proceedings of the National Academy of Sciences.
<i>Proc. Nova Scotia Inst. Sci.</i>	Proceedings of the Nova Scotia Institute of Science.
<i>Proc. Phil. Soc. Glasgow</i> . .	Proceedings of the Glasgow Philosophical Society.
<i>Proc. Physical Soc.</i>	Proceedings of the Physical Society of London.
<i>Proc. Physiol. Soc.</i>	Proceedings of the Physiological Society.
<i>Proc. Roy. Inst.</i>	Proceedings of the Royal Institution of Great Britain.
<i>Proc. Roy. Irish Acad.</i> . .	Proceedings of the Royal Irish Academy.
* <i>Proc. Roy. Soc.</i>	Proceedings of the Royal Society.
<i>Proc. Roy. Soc. Edin.</i> . . .	Proceedings of the Royal Society of Edinburgh.
<i>Proc. Roy. Soc. Med.</i>	Proceedings of the Royal Society of Medicine.
<i>Proc. Roy. Soc. Queensland</i>	Proceedings of the Royal Society of Queensland.
<i>Proc. Roy. Soc. Tasmania</i> . .	Proceedings of the Royal Society of Tasmania.
<i>Proc. Soc. Exp. Biol. Med.</i> .	Proceedings of the Society for Experimental Biology and Medicine.
<i>Proc. U.S. Nat. Mus.</i>	Proceedings of the United States National Museum.
<i>Proc. verb. Soc. Toscana Sci. Nat.</i>	Processi verbali Società Toscana di Scienze Naturali.
Pulp and Paper Magazine . .	Pulp and Paper Magazine of Canada.
<i>Quart. J. Exp. Physiol.</i> . . .	Quarterly Journal of Experimental Physiology.
<i>Quart. J. Geol. Soc.</i>	Quarterly Journal of the Geological Society.
<i>Quart. J. Med.</i>	Quarterly Journal of Medicine.
<i>Radium in Biol. Heilkunde</i>	Radium in Biologie und Heilkunde.
<i>Rec. Australian Mus.</i>	Records of the Australian Museum.
<i>Rec. trav. bot. Néerland.</i> . .	Recueil des travaux botaniques Néerlandaises.
* <i>Rec. trav. chim.</i>	Recueil des travaux chimiques des Pays-Bas.
<i>Rend. Accad. Sci. Fis. Mat. Napoli.</i>	Rendiconto dell' Accademia delle Scienze Fisiche e Matematiche, Napoli.
<i>Rend. Ist. Lomb. Sci. Lett.</i> .	Rendiconti dell' Reale Istituto Lombardo di Scienze e Lettere.
<i>Rep. Aust. Assoc. Sci.</i> . . .	Report of the Australian Association for the Advancement of Science.
<i>Rep. Brit. Assoc.</i>	Report of the British Association for the Advancement of Science.
<i>Rev. Chim.</i>	Revue chimique Oficijelni organ udruženja Jugoslavenskih Kemikara.

ABBREVIATED TITLE.	JOURNAL.
<i>Rev. gén. Bot.</i>	Revue générale de Botanique.
<i>Rev. Gén. Mat. Col.</i>	Revue Générale des Matières Colorantes.
<i>Rev. Mét.</i>	Revue de Métallurgie.
<i>Rev. Real Acad. Ciencias exact. Madrid.</i>	Revista de la Real Academia de Ciencias exactas, Físicas y Naturales de Madrid.
<i>Riv. Min. Crist. Ital.</i>	Rivista di Mineralogia e Cristallografia Italiana.
<i>Sbornik Klubu Pri.</i>	Sbornik Klubu Prirodovedeckeho (Prague).
<i>Schweiz. Apoth. Zeit.</i>	Schweizerische Apotheker Zeitung.
<i>Schweiz. Chem. Zeit.</i>	Schweizerische Chemiker Zeitung.
<i>Science</i>	Science.
<i>Scient. Amer.</i>	Scientific American.
<i>*Sci. Ind. Rep. Roure-Bertrand Fils.</i>	Scientific and Industrial Reports of Roure-Bertrand Fils.
<i>Sci. Proc. Roy. Dubl. Soc.</i>	Scientific Proceedings of the Royal Dublin Society.
<i>Sci. Rep. Tohoku Imp. Univ.</i>	Science Reports, Tohoku Imperial University.
<i>Sci. Trans. Roy. Dubl. Soc.</i>	Scientific Transactions of the Royal Dublin Society.
<i>Seifensied. Ztg.</i>	Seifensieder Zeitung.
<i>Sitzungsber. Akad. München.</i>	Sitzungsberichte der bayerischen Akademie der Wissenschaften zu München.
<i>Sitzungsber. Akad. Wiss. Wien.</i>	Sitzungsberichte der Akademie der Wissenschaften, Wien.
<i>Sitzungsber. Ges. Naturwiss. Marburg.</i>	Sitzungsberichte der Gesellschaft zur Beförderung der gesammten Naturwissenschaften in Marburg.
<i>Sitzungsber. Heidelberger Akad. Wiss.</i>	Sitzungsberichte der Heidelberger Akademie der Wissenschaften.
<i>Sitzungsber. Med. Naturwiss. Ges. Münster.</i>	Sitzungsberichte der Medizinisch-Naturwissenschaftlichen Gesellschaft zu Münster-in-Westfalens.
<i>Sitzungsber. Naturforsch. Ges. Rostock.</i>	Sitzungsberichte der Naturforschenden Gesellschaft zu Rostock.
<i>Sitzungsber. phys. med. Ges. Erlangen.</i>	Sitzungsberichte der physikalisch-medizinischen Gesellschaft zu Erlangen.
<i>Sitzungsber. Preuss. Akad. Wiss. Berlin.</i>	Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin.
<i>Skand. Arch. Physiol.</i>	Skandinavisches Archiv für Physiologie.
<i>Smithsonian Miscell. Coll.</i>	Smithsonian Miscellaneous Collections.
<i>*Soil Sci.</i>	Soil Science.
<i>South African J. Ind.</i>	South African Journal of Industries.
<i>South African J. Sci.</i>	South African Journal of Science.
<i>Sprechsaal.</i>	Sprechsaal.
<i>Stahl u. Eisen</i>	Stahl und Eisen.
<i>Staz. sper. agr. ital.</i>	Stazioni sperimentali agrarie italiane.
<i>Strahlenther.</i>	Strahlentherapie.
<i>Suom. Tied. Toim.</i>	Suomalaisen Tiedekatemia Toimustus.
<i>Svensk Kem. Tidskr.</i>	Svensk Kemisk Tidskrift.
<i>T.</i>	Transactions of the Chemical Society.
<i>Tech. Rep. Tohoku Imp. Univ.</i>	Technology Reports of the Tohoku Imperial University, Sendai, Japan.
<i>Tekn. Tidskr.</i>	Teknisk Tidskrift.
<i>Textilber.</i>	Textilberichte über Wissenschaft, Industrie und Handel.
<i>Ther. Gegenw.</i>	Die Therapie der Gegenwart.
<i>Ther. Monatsh.</i>	Therapeutische Half-Monatshefte.
<i>Times Eng. Suppl.</i>	Times Engineering Supplement.
<i>Tonind. Zeit.</i>	Tonindustrie-Zeitung.
<i>Trans. Amer. Electrochem. Soc.</i>	Transactions of the American Electrochemical Society.
<i>Trans. Amer. Inst. Chem. Eng.</i>	Transactions of the American Institute of Chemical Engineers.
<i>Trans. Amer. Inst. Metals</i>	Transactions of the American Institution of Metals.

ABBREVIATED TITLE.	JOURNAL.
Trans. Amer. Inst. Min. Eng.	Transactions of the American Institute of Mining Engineers.
Trans. Ceram. Soc.	Transactions of the Ceramic Society.
*Trans. Faraday Soc.	Transactions of the Faraday Society.
Trans. Inst. Min. and Met.	Transactions of the Institution of Mining and Metallurgy.
Tr. N. Eng. Inst. Min. and Met.	Transactions of the North of England Institute of Mining and Metallurgy.
Trans. New Zealand Inst.	Transactions of the New Zealand Institute.
Trans. Nova Scotia Inst. Sci.	Transactions of the Nova Scotia Institute of Science.
Trans. Roy. Irish Acad.	Transactions of the Royal Irish Academy.
Trans. Roy. Soc. Canada	Transactions of the Royal Society of Canada.
Trans. Roy. Soc. Edin.	Transactions of the Royal Society of Edinburgh.
Trans. Roy. Soc. Sth. Africa.	Transactions of the Royal Society of South Africa.
Tsch. Min. Mitt.	Tschermak's Mineralogische Mitteilungen.
U.S. Bureau of Mines, Bull. and Tech. Papers.	United States Bureau of Mines, Bulletins and Technical Papers.
U.S. Bureau Plant Ind.	United States Bureau of Plant Industry.
U.S. Comm. Rept.	United States Commerce Reports, Daily Consular and Trade Reports.
U.S. Dept. Agric. Bull.	United States Department of Agriculture Bulletins.
U.S. Hyg. Labor. Bull.	United States Hygienic Laboratory Bulletins.
U.S. Pat.	United States Patent.
Univ. Illinois Bull.	University of Illinois Bulletins.
Utah Agric. Coll. Exper. Stat. Bull.	Utah Agricultural College Experiment Station Bulletins.
Verh. Geol. Reichsanst. Wien.	Verhandlungen der geologischen Reichsanstalt in Wien.
Verh. Ges. deut. Naturforsch. Aerzte.	Verhandlungen der Gesellschaft deutscher Naturforscher und Aerzte.
Verh. Naturhist. med. Ver. Heidelberg.	Verhandlungen des naturhistorisch-medizinischen Vereins zu Heidelberg.
Verh. Naturhist. Rheinl.	Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande und Westfalens.
Verh. Physiol. Ges. Berlin.	Verhandlungen der Physiologischen Gesellschaft zu Berlin.
Verh. Schweiz. Nat. Ges.	Verhandlungen der Schweizerischen Naturforschenden Gesellschaft, Basel.
Vict. Mem. Mus. Geol. Survey, Canada.	Victoria Memorial Museum Geological Survey of Canada, Bulletin.
Videnskab. Skrifter	Skrifter udgivne af Videnskabselskabet i Kristiania.
Wiener Klin. Woch.	Wiener Klinische Wochenschrift.
Wiss. Abhandl. Physikal.-Tech. Reichsanst.	Wissenschaftliche Abhandlungen der Physikalisch-Technischen Reichsanstalt.
Wochbl. Papierfabr.	Wochenblatt für Papierfabrikation.
Woch. f. Brau.	Wochenschrift für Brauerei.
*Yakugakuzasshi (J. Pharm. Soc. Japan).	Yakugakuzasshi (Journal of the Pharmaceutical Society of Japan).
Z. allg. Physiol.	Zeitschrift für allgemeine Physiologie.
*Z. anal. Chem.	Zeitschrift für analytische Chemie.
*Z. angew. Chem.	Zeitschrift für angewandte Chemie.
*Z. anorg. Chem.	Zeitschrift für anorganische und allgemeine Chemie.
Z. Biol.	Zeitschrift für Biologie.
Z. deut. Geol. Ges.	Zeitschrift der deutschen Geologischen Gesellschaft.
Z. deut. Oel-Fett Ind.	Zeitschrift des deutschen Oel- und Fett-Industrie.
*Z. Elektrochem.	Zeitschrift für Elektrochemie.
Z. exp. Path. Ther.	Zeitschrift für experimentelle Pathologie und Therapie.

ABBREVIATED TITLE.	JOURNAL.
<i>Z. ges. Brauw.</i> . . .	Zeitschrift für das gesamte Brauwesen.
<i>Z. ges. exp. Med.</i> . . .	Zeitschrift für die gesamte experimentelle Medizin.
<i>Z. ges. Schiess- u. Sprengstoffw.</i> *	Zeitschrift für das gesamte Schiess- und Sprengstoffwesen.
<i>Z. Hyg.</i> . . .	Zeitschrift für Hygiene und Infektionskrankheiten.
<i>Z. Immunitt.</i> . . .	Zeitschrift für Immunitätsforschung und experimentelle Therapie.
<i>Z. Instrument.</i> . . .	Zeitschrift für Instrumentenkunde.
<i>Z. Kryst. Min.</i> . . .	Zeitschrift für Krystallographie und Mineralogie.
<i>Z. öffentl. Chem.</i> . . .	Zeitschrift für öffentliche Chemie.
<i>Z. Physik.</i> . . .	Zeitschrift für Physik.
* <i>Z. physikal. Chem.</i> . . .	Zeitschrift für physikalische Chemie, Stöchiometrie und Verwandtschaftslehre.
<i>Z. physikal. Chem. Unterr.</i>	Zeitschrift für den physikalischen und Chemischen Unterricht.
<i>Z. physiol. Chem.</i> . . .	Hoppe-Seyler's Zeitschrift für physiologische Chemie.
<i>Z. prakt. Geol.</i> . . .	Zeitschrift für praktische Geologie.
* <i>Z. Sauerstoff Stickstoff Ind.</i>	Zeitschrift für Sauerstoff und Stickstoff Industrie.
* <i>Z. Spiritusind.</i> . . .	Zeitschrift für Spiritusindustrie.
<i>Z. Unters. Nahr. Genussm.</i>	Zeitschrift für Untersuchung der Nahrungs- und Genussmittel.
<i>Z. Ver. deut. Zuckerind.</i>	Zeitschrift des Vereins der deutschen Zucker-Industrie.
<i>Z. wiss. Mikrosk.</i> . . .	Zeitschrift für wissenschaftliche Mikroskopie und mikroskopische Technik.
* <i>Z. wiss. Photochem.</i> . . .	Zeitschrift für wissenschaftliche Photographie, Photo-physik und Photochemie.
* <i>Z. Zuckerind. Cechoslov.</i>	Zeitschrift für Zuckerindustrie der Cechoslovakischen Republik.
<i>Zentr. Zuckerind.</i> . . .	Zentralblatt für Zuckerindustrie.

JOURNAL OF THE CHEMICAL SOCIETY.

ABSTRACTS OF PAPERS ON PHYSICAL, INORGANIC, MINERALOGICAL, AND ANALYTICAL CHEMISTRY.

Committee of Publication:

A. J. ALLMAND, M.C., D.Sc.	T. M. LOWRY, C.B.E., D.Sc., F.R.S.
O. L. BRADY, D.Sc.	J. I. O. MASON, M.B.E., D.Sc.
A. W. CROSSLEY, C.M.G., C.B.E., D.Sc., F.R.S.	G. T. MORGAN, O.B.E., D.Sc., F.R.S.
C. H. DESCH, D.Sc., Ph.D.	T. S. PATTERSON, D.Sc., Ph.D.
M. O. FORSTER, D.Sc., Ph.D., F.R.S.	J. C. PHILIP, O.B.E., D.Sc., Ph.D., F.R.S.
J. T. HEWITT, M.A., D.Sc., Ph.D., F.R.S.	N. V. SIDGWICK, M.A., Sc.D.
J. C. IRVINE, C.B.E., D.Sc., F.R.S.	J. F. THORPE, C.B.E., D.Sc., F.R.S.
C. A. KEANE, D.Sc., Ph.D.	Sir JAMES WALKER, D.Sc., LL.D., F.R.S.

Editors:

J. C. CAIN, D.Sc.

A. J. GREENAWAY.

Assistant Editor:

CLARENCE SMITH, D.Sc.

Assistant:

A. A. ELDRIDGE, B.Sc.

Indexer:

MARGARET LE PLA, B.Sc.

Abstractors:

G. BARGER, M.A., D.Sc., F.R.S.	T. H. POPE, B.Sc.
J. C. DRUMMOND, D.Sc.	G. W. ROBINSON, M.A.
H. J. EVANS, B.Sc.	E. H. RODD, D.Sc.
W. GODDEN, B.Sc.	F. M. ROWE, D.Sc.
C. R. HARRINGTON, B.A.	W. P. SKERTCHLY.
C. K. INGOLD, D.Sc.	F. SODDY, M.A., F.R.S.
K. KASHIMA.	J. F. SPENCER, D.Sc., Ph.D.
J. KENNER, D.Sc., Ph.D.	L. J. SPENCER, M.A., Sc.D.
W. O. KERMACK, M.A., B.Sc.	E. STEDMAN, B.Sc.
H. KING, D.Sc.	D. F. TWISS, D.Sc.
S. I. LEVY, B.A., B.Sc.	J. C. WITHERS, Ph.D.
G. F. MORRELL, D.Sc., Ph.D.	H. WREN, M.A., D.Sc., Ph.D.
J. R. PARTINGTON, M.B.E., D.Sc.	S. S. ZILVA, D.Sc., Ph.D.

1921. Vol. CXX. Part II.

LONDON:

GURNEY & JACKSON, 33, PATERNOSTER ROW, E.C. 4.

1921.

Abstractors of the *Journal of the Society of Chemical Industry*,
who have contributed to this volume.

S. S. AUSTIN.
L. A. COLES.
A. J. HALL.
C. IRWIN.
J. H. JOHNSTON, M.Sc.
J. H. LANE.
C. A. MITCHELL, M.A.
W. PAYMAN.

A. G. POLLARD.
A. R. POWELL.
H. C. REYNARD.
A. B. SEARLE.
J. S. G. THOMAS, B.Sc.
D. WOODROFFE.
W. J. WRIGHT.

JOURNAL OF THE CHEMICAL SOCIETY.

ABSTRACTS OF PAPERS.

Committee of Publication:

A. J. ALLMAND, M.C., D.Sc.	T. M. LOWRY, C.B.E., D.Sc., F.R.S.
O. L. BRADY, D.Sc.	J. I. O. MASON, M.B.E., D.Sc.
A. W. CROSSLEY, C.M.G., C.B.E., D.Sc., F.R.S.	G. T. MORGAN, O.B.E., D.Sc., F.R.S.
C. H. DESCH, D.Sc., Ph.D.	T. S. PATTERSON, D.Sc., Ph.D.
M. O. FORSTER, D.Sc., Ph.D., F.R.S.	J. C. PHILIP, O.B.E., D.Sc., Ph.D., F.R.S.
J. T. HEWITT, M.A., D.Sc., Ph.D., F.R.S.	N. V. SIDGWICK, M.A., Sc.D.
J. C. IRVINE, C.B.E., D.Sc., F.R.S.	J. F. THORPE, C.B.E., D.Sc., F.R.S.
C. A. KEANE, D.Sc., Ph.D.	SIR JAMES WALKER, D.Sc., LL.D., F.R.S.

Editors:

J. C. CAIN, D.Sc.

A. J. GREENAWAY.

Assistant Editor:

CLARENCE SMITH, D.Sc.

Assistant:

A. A. ELDRIDGE, B.Sc.

Indexer:

MARGARET LE PLA, B.Sc.

Abstractors:

G. BARGER, M.A., D.Sc., F.R.S.	T. H. POPE, B.Sc.
J. C. DRUMMOND, D.Sc.	G. W. ROBINSON, M.A.
H. J. EVANS, B.Sc.	E. H. RODD, D.Sc.
W. GODDEN, B.Sc.	F. M. ROWE, D.Sc.
C. R. HARRINGTON, B.A.	W. P. SKETCHLY.
C. K. INGOLD, D.Sc.	F. SODDY, M.A., F.R.S.
K. KASHIMA.	J. F. SPENCER, D.Sc., Ph.D.
J. KENNER, D.Sc., Ph.D.	L. J. SPENCER, M.A., Sc.D.
W. O. KERMACK, M.A., B.Sc.	E. STEDMAN, B.Sc.
H. KING, D.Sc.	D. F. TWISS, D.Sc.
S. I. LEVY, B.A., B.Sc.	J. C. WITHERS, Ph.D.
G. F. MORRELL, D.Sc., Ph.D.	H. WREN, M.A., D.Sc., Ph.D.
J. R. PARTINGTON, M.B.E., D.Sc.	S. S. ZILVA, D.Sc., Ph.D.

1921. Vol. CXX. Parts I. & II.

LONDON:

GURNEY & JACKSON, 33, PATERNOSTER ROW, E.C. 4.

1921.

Abstractors of the *Journal of the Society of Chemical Industry*,
who have contributed to this volume.

S. S. AUSTIN.
L. A. COLES.
A. J. HALL.
C. IRWIN.
J. H. JOHNSTON, M.Sc.
J. H. LANE.
C. A. MITCHELL, M.A.
W. PAYMAN.

A. G. POLLARD.
A. R. POWELL.
H. C. REYNARD.
A. B. SEARLE.
J. S. G. THOMAS, B.Sc.
D. WOODROFFE.
W. J. WRIGHT.

CHANGES OF ADDRESS.

Fellows are requested to notify the Assistant Secretary of Changes of Address.

LIBRARY.

The Library is open for reference and for the issue and return of books from 10 A.M. to 9 P.M. on every week-day except Saturday, when it is open from 10 A.M. to 5 P.M.

TELEPHONE.

The Telephone Number of the Society is GERRARD 6322.

PUBLICATIONS OF THE SOCIETY.

With the exception of certain numbers of the Journals and Proceedings which are out of print, the following publications may be obtained from Messrs. Gurney and Jackson, 33, Paternoster Row, E.C.4.

		Price to Fellows.	Price to Public.
		£ s. d.	£ s. d.
Memoirs and Proceedings, 1841—1847 (3 Vols.)	... per vol.	1 0 0	1 10 0
Quarterly Journal, 1848—1862 (14 Vols.)	... per vol.	1 0 0	1 10 0
" " " " (Single Parts)	... per part	5 0	7 6
Journal, 1862—1895	... per ann.	1 10 0	1 10 0
" " " " (Single Parts)	... per part	2 6	2 6
" " " " 1896—1914	... per ann.	2 0 0	2 0 0
" " " " (Single Parts)	... per part	3 6	3 6
Journal and Proceedings, 1915 (onwards)	... per ann.	3 10 0	4 0 0
" " " " (Single Parts)	... per part	6 0	7 6
*Proceedings, 1885—1914	... per vol.	7 6	7 6
" " " " (Single Parts)	... per part	6	6
Annual Reports on the Progress of Chemistry (bound in cloth)			
Vol. I (1904) to present date	... per vol.	6 0	7 6
Collective Index, Vol. I. 1841—1872	... per vol.	4 0	4 0
" " " " II. 1873—1882	... per vol.	10 0	15 0
" " " " III. 1883—1892	... per vol.	15 0	1 0 0
" " " " IV. 1893—1902	... per vol.	1 0 0	1 10 0
" " " " V. 1903—1912	... per vol.	2 0 0	2 10 0
Jubilee Volume (giving history of the Chemical Society from 1841—1891)	...	2 6	2 6
Memorial Lectures, 1893—1900 (out of print)	...	7 6	7 6
" " " " Volume II. 1901—1913	...	7 0	8 0
Library Catalogue, 1903	...	2 6	2 6
Cases for binding the Journal in 4 vols.	... per ann.	10 0	10 0
Tables of International Atomic Weights for 1920—1921 (as recommended by the International Atomic Weights Committee):			

Price to Fellows:

On Cards: 1s. 6d. per dozen; 5s. 6d. for 50; 10s. 6d. per 100.

On Paper: 6d. per dozen; 1s. 6d. for 50; 2s. 6d. per 100.
(Suitable for pasting into Note Books.)

Price to Public:

On Cards: 2s. per dozen; 7s. 6d. for 50; 14s. per 100.

On Paper: 8d. per dozen; 2s. 3d. for 50; 4s. per 100.

* Included with Journal as from January, 1915.

Note.—With the exception of the Collective Indexes, the above are post free to Fellows.

NOTICES TO AUTHORS OF PAPERS.

The attention of Authors is directed to the following regulations of Council regarding Scientific Communications submitted to the Chemical Society:

1. All Scientific Communications for the Journal should be addressed to "The Secretaries, Chemical Society, Burlington House, W.1."

2. No paper can be included in the list of Scientific Communications to be brought before any Ordinary Scientific Meeting of the Society unless the paper itself or a summary thereof is received by the Secretaries on the Monday previous to the day of Meeting.

3. The Society reserves the right to retain the Manuscript and illustrative drawings of all papers sent to it, and authors are therefore advised to keep copies. When papers have been accepted for publication the authors are not at liberty, save by permission of the Council, to publish them elsewhere until such papers, or abstracts of them, have appeared in the Journal of the Society.

4. Papers which are deemed by the Council unsuitable for publication in the Journal, or which have been withdrawn from publication by the Author, are deposited in the Society's Archives.

5. Communications which have appeared in any other Journal shall not be published in the Journal of the Chemical Society unless this course is approved by a special vote of the Council.

6. The address to which proofs are to be sent should be written on every paper.

7. If any Author requires more than the 10 reprints allowed by the Society, he should inform Dr. Smith at the time he sends in the corrected proof. Extra copies will be supplied at rates which can be obtained from the Printers.

8. Illustrations for the Journal (including curves) are, as far as possible, executed in photographic "process" work, and, accordingly, drawings, etc., accompanying the papers must be carefully drawn, about twice the size of the finished block, on smooth, white Bristol board in Indian ink, so as to admit of the blocks being prepared directly from the drawings. When it is necessary to use plates, these also must be of convenient dimensions. Any lettering on the drawings should be in pencil. Further information can be obtained from Dr. C. Smith, "Lexham," Church Road, Hanwell, W.7.

Abstractors are requested to send their MSS. and corrected proofs to Mr. Greenaway, the Orchard, Chertsey, Surrey, and to communicate change of address to the Printers, Richard Clay & Sons, Ltd., The Chaucer Press, Bungay, Suffolk, as well as to the Editors.

